A "Land of Unique Value Study "

Mansfield, Connecticut

by:

L.A @
UConn

The Program of
Landscape Architecture@ the
University of Connecticut

Project Manager:
Associate Professor
Peter Miniutti

Graduate Student:
Matt Bishop

11.07.03

The "Lands of Unique Value" methodology has been developed by Associate Professor Peter Miniutti as part of his responsibility to the Program of Landscape Architecture @ the University of Connecticut. Please contact Peter @ peter.miniutti@uconn.edu with any suggestions, comments or concerns regarding this study.

All maps in this document are not to scale and should be used for conceptual planning purposes only as the maps are based on intermediate resolution satellite technology. For complete map references, see Appendix.

Acknowledgements:

Primary Team:
Program of Landscape Architecture @ UConn
Project Manager: Associate Professor Peter Miniutti
Graduate Student: Matt Bishop

Mansfield Town Planner:
Gregory Padick

Project Sponsors:
Town of Mansfield
UConn

Coordination Committee:
(active members)
Isabelle Atwood, citizen
Jana Butts, WinCog
Thomas Callahan, UConn
Rudy Favretti, Planning & Zoning
Karla Fox, UConn
Tom Meyer, citizen
Lance Minkler, Conservation Commission
John Silander, Conservation Commission

Special Consultants:
Randall Arnedt
Richard T.T. Forman
Survey Research Center @ Conn

Contents

0.0 Introduction

What is a "Lands of Unique Value" study?

A land use methodology which analyzes all existing land features (natural and cultural) to determine the most logical and reasonable future land uses, balancing conservation, preservation, and sensible development

Objective of the "Lands of Unique Value" study for Mansfield

Is to demonstrate by example an innovative approach to local land use planning, and at the same time provide both Mansfield and the Regional Planning Commission with information and tools to plan intelligently and pro-actively for smart growth in the future. The "Lands of Unique Value" study for Mansfield is being conducted under contract with Associate Professor Peter Miniutti of University of Connecticut's Program of Landscape Architecture. This cooperative project, which includes a coordination committee of town, University and Regional Planning Agency representatives,will create and update an inventory of Mansfield's natural, cultural and visual features and provide recommendations for future land uses and associated regulatory revisions for land under municipal regulatory jurisdiction. The generated mapping information, which will be coordinated with the town's new computer base mapping will be an important data source for Mansfield's Plan of Conservation and Development update, which is scheduled to be completed by the end of 2003. It is also our expectation that the "Lands of Unique Value" vision will be incorporated into the town's Plan of Conservation and Development and zoning regulations and into the region's Growth and Preservation Guide Plan. Local decision-makers will be provided with a flexible and accessible land management document to help guide decision-making on a daily basis.

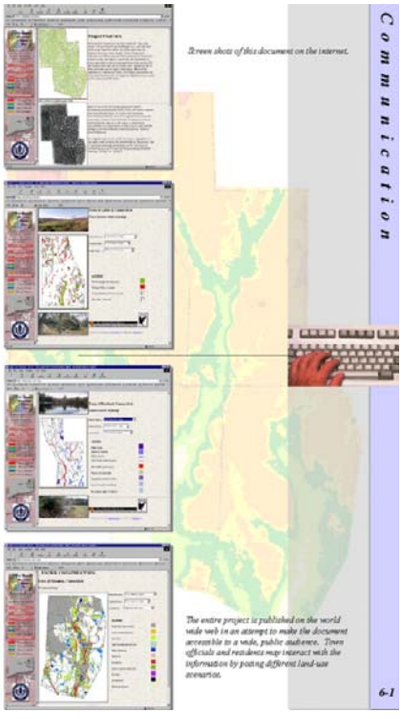
The University of Connecticut

UConn located primarily in the north west part of town occupies 3,190± acres. There is also 53 miles of common border between Uconn land and non-UConn town land. Plenty of frontage of potential conflict. This study does not provide in-depth analysis and planning for UConn lands because:
(1) state land, such as UConn, is not controlled by the local municipal regulatory system,
(2) in lieu of town regulatory controls, UConn's growth, in part, is guided by state wide agencies, such as the office of Policy and Management (see Conservation Development Policies Plan), and
(3) UConn's Master Plan is currently being updated by the planning firm of Johnson, Johnson and Roy from Ann Arbor, Michigan.

It is important that UConn and Mansfield coordinate land planning efforts because neither entity can be successful with long range planning efforts without the support of the other.

Dissemination of the Information

A website will make the information available to all. Additionally, "hard copies" will also be available at the Town Hall.



Example of Lands of Unique value website

Project Diagram:

1.0 Program Phase.
Programming is a process leading to the statement of a land use problem and the requirements to be met in offering a solution. It is the search for sufficient information to clarify, to understand, to state the problem. Programming is problem seeking and planning is problem solving.

2.0 Research Phase:
This phase is characterized as "fact-finding" of natural and cultural characteristics. The maps generated in this phase serve as an inventory. Data is collected from a number of sources including extensive site reconnaissance, public agencies, planning offices, and the internet for GIS based information.

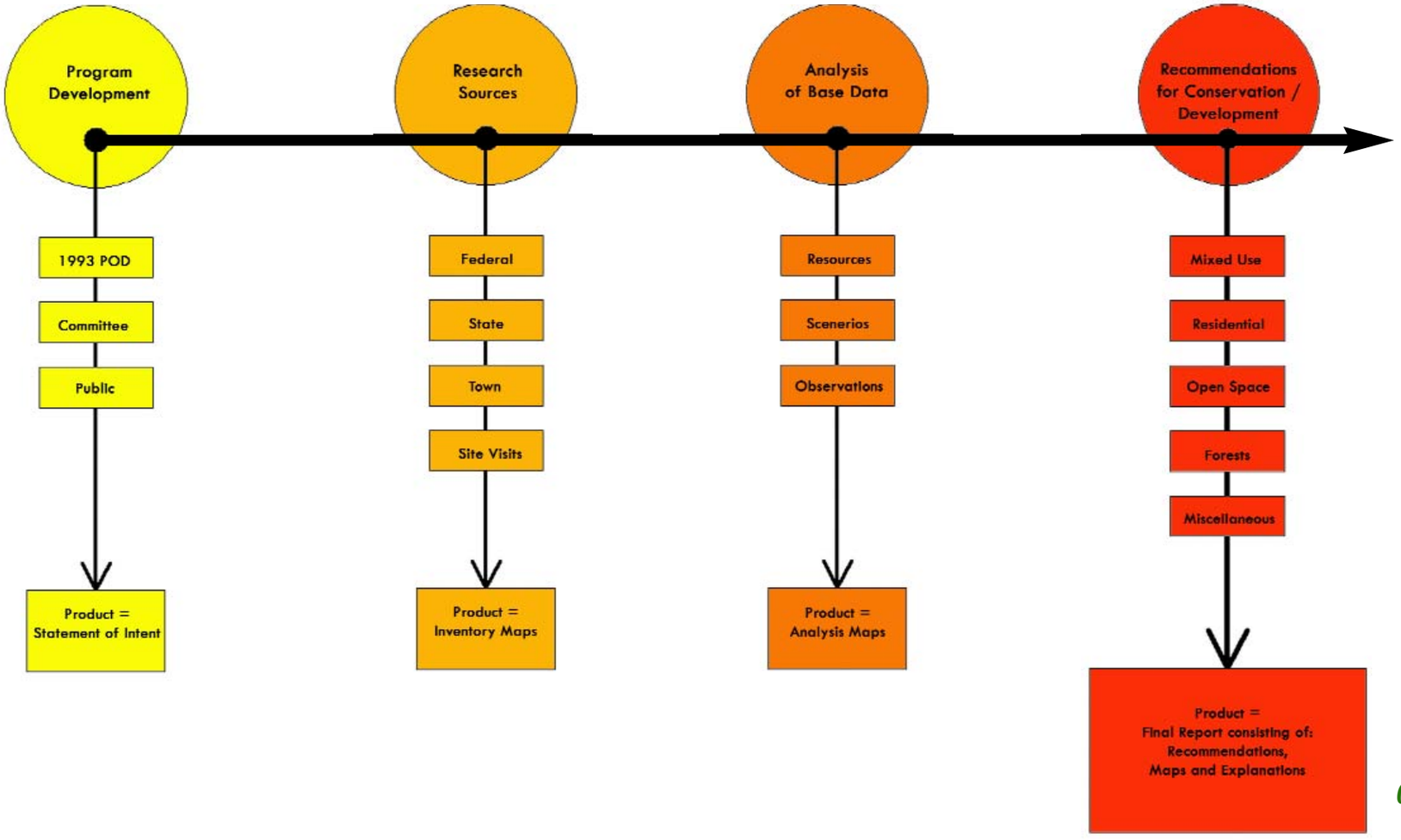
See 2.0 Research Phase and 5.0 Appendix for Inventory Maps.

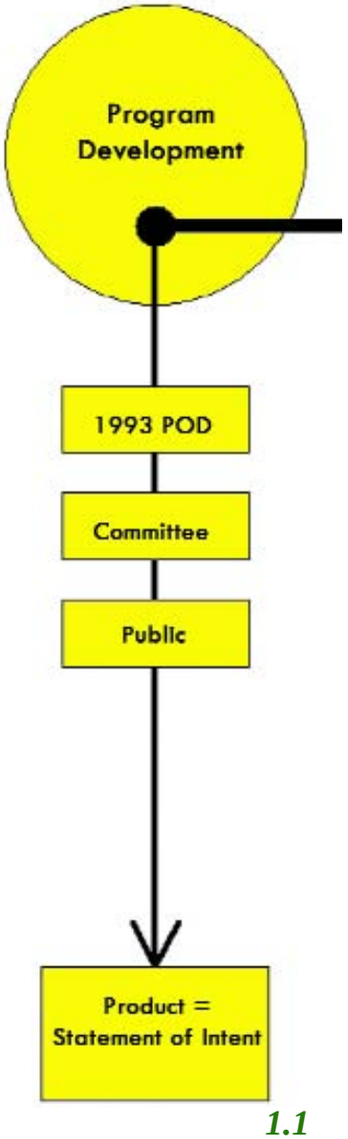
3.0 Analysis Phase:
The goal of the analysis phase is to evaluate the data collected during the research phase. In this phase the inventory maps are transformed into maps which identify opportunities and constraints of the site characteristics in relationship to the program statement.

See 3.0 Analysis Phase for Maps.

4.0 Recommendations Phase:
At this stage of the process, principles for directing future conservation and development are applied to Mansfield's unique combination of programmatic needs and town characteristics to produce a map for each principle. This study recommends "10 Principles for Sensible Growth" to help the citizens of Mansfield to accomplish the five general policy goals as stated in the 1993 Plan of Development.

See 4.0 Recommendation Phase for maps.




Program
Development
1993 POD
Committee
Public
Product =
Statement of Intent

a thought on program development:

An environment which is ordered in precise and final detail may inhibit new patterns of activity. A landscape whose every rock tells a story may make difficult the creation of fresh stories. Although this may not seem to be a critical issue in our present urban (suburban) chaos, yet it indicates that what we seek is not a final but an open ended order, capable of continuous further development.

Kevin Lynch

1.2

Program Development

The program for this project has been influenced by three major sources:

(1) 1993 Plan of Development;
(2) the Lands of Unique Value Steering Committee;
(3) the public via public work sessions and the town-wide survey.

1993 Plan of Development
Mansfield's 1993 POD is a well organized, understandable, solid planning document. We believe many of the polices, objectives , and goals listed nearly ten years ago are still current and valid today. With this in mind, we have accepted the five general policy goals from 1993 as a "point of departure" for this study. The five goals are:

Goal 1: To conserve and preserve Mansfield's natural, historic and agricultural resources and semi-rural atmosphere;

Goal 2: To provide opportunities for orderly and energy-efficient development and a safe and compatible land use balance of housing, business, industry, agriculture, open space and governmental functions;

Goal 3: To strengthen and encourage a sense of neighborhood and community throughout Mansfield;

Goal 4: To encourage and provide for a mix of housing opportunities for all income levels;

Goal 5: To encourage development patterns that enhance public transportation opportunities.

One could argue, although the goals themselves are admirable, some of the recent (past ten years) development in town may not seem to be consistent with the goals. For instance, during the public work sessions, the general consensus of the participants is that the recent development at four corners is not the type of development which the town should aspire to.

My hope, is that this document can provide insights, techniques, and expertise to allow the various land use boards, staff , and the general public to better achieve the five general policy goals listed in the 1993 Plan of Development.

Lands of Unique Value Steering Committee
The LUV steering committee was extremely active, at times meeting weekly to review and discuss the direction of the project. The committee or individuals on the committee made the following points:

(1) The study needs to give clear guidance on how to define, identify and protect lands for wildlife corridors;

(2) The study needs to be careful not to recommend the protection of so much land that there would be no land left for development;

(3) The study needs to clearly state that the maps are for general planning purposes only and should not be used for site design applications;

(4) The committee was split on the how best to coordinate land use between UConn and the Town of Mansfield;

(5) The study needs to help the town to continue to develop techniques to promote "conservation" type residential developments;

(6) The town-wide survey be conducted by a professional survey organization instead of being administered by the LUV team.

The steering committee did an excellent job in asking extremely difficult questions. Like,

"How many more residential building lots are still available and where are they located"?

"What makes for good wildlife corridors and where should they be located"?

"What forests in town should be protected"? "Why"?

"What views should be protected"? "Will protecting all the good views be legally possible"? "Will any land be left for development"?

These questions are covered in the "Scenario" section of the 3.0 Analysis Phase.

The Public Informational Sessions
There were three public presentations during the study.

Public Presentation I:
Provided a project overview from Town Planner Gregory Padick, a description of the public opinion poll which was to be conducted by the Center of Survey Research @ UConn by Chris Barnes, and a review of the inventory maps by Associate Professor Peter Miniutti. The majority of the meeting was focused on a "working session" where the public, working in small teams, created their vision for Mansfield. See "The Public" in 3.0 Analysis Phase for additional information.

Public Presentation II:
Provided a project update from Town Planner Gregory Padick. The focus of this meeting was a presentation by Associate Professor Peter Miniutti. The presentation dealt with the functionality and aesthetic

quality of roadways, existing views that may want to be protected and an in-depth study on how to improve the quality of town open space by increasing connectivity of the open space system. Instead of a public "work session", Associate Professor Peter Miniutti asked the meeting participants the following questions:

What roads (or parts of roads) in town do you feel have an equal balance of motorist functionality, residential flavor/scale and positive aesthetic value?

What roads (or parts of roads) in town do you feel have the worst imbalance of motorist functionality, residential flavor/scale and positive aesthetic value?

Do you know of any views or vistas that are worthy of protection?

Does this approach, as presented (connecting of open space to create a system) make any sense? How could it be improved?

Peter asked for answers to be mailed or e-mailed to the town planner or directly to him. No responses were received.

<u>Final Public Presentation:</u>
Gregory Padick provided a project update with the meeting centered on a presentation by Associate Professor Peter Miniutti.

The meeting agenda was as follows:

<u>Agenda:</u>
Part I: Town Resources
Topography
Surficial Water
Surficial Geology / Soils
Flora / Fauna
Cultural

Part II: Scenarios
Yield Plan
Forests
Open Space
Views

Part III: Recommendations
Mixed use development
Hill Tops and Views
Open Space

A question and answer period followed the presentation.

The Public Opinion Poll

Randall Arendt, in his book, "Rural By Design" discusses a study conducted by the town of Wedell, Massachusetts to identify the town features most needy and worthy of protection. The town, working with landscape architects, created a participatory process to determine public attitudes about these special places.Part of the process involved a survey asking respondents to locate"places of the heart".Survey participation was encouraged by volunteers who hand-delivered questionnaires to each household. A 'vision' workshop was then held, at which time residents gathered into small groups to describe, both in words and sketches what they wanted their town to look look in the future.The ensuing plan received an award for, "outstanding comprehensive planning in a rural area" from the New England chapter of the American Planning Association in 1990.

Associate Professor Peter Miniutti suggested a similar process could be used for the LUV study. The steering committee was uncomfortable with the informality of the "places of the heart" survey and recommended that a public opinion poll be conducted by professional survey researchers. The Center of Survey Research @ UConn conducted a survey of public opinion. The survey was conducted for Mansfield residents and also for UConn students.

The results of Mansfield residents reinforce the attitudes expressed at the public workshops. These attitudes include:

Nearly seven out of ten (69%) of Mansfield residents are concerned about the development of Mansfield.

Nine in ten residents strongly or somewhat favor the development of agricultural projects.

More than eight out of ten residents strongly or somewhat favor home businesses, recreation based businesses such as camping, sports camps, or the development of tourism/heritage businesses designed to attract visitors to points of interest and natural surroundings.

The majority of residents expressed interest in protecting natural features, both in the overall town and at the UConn campus.

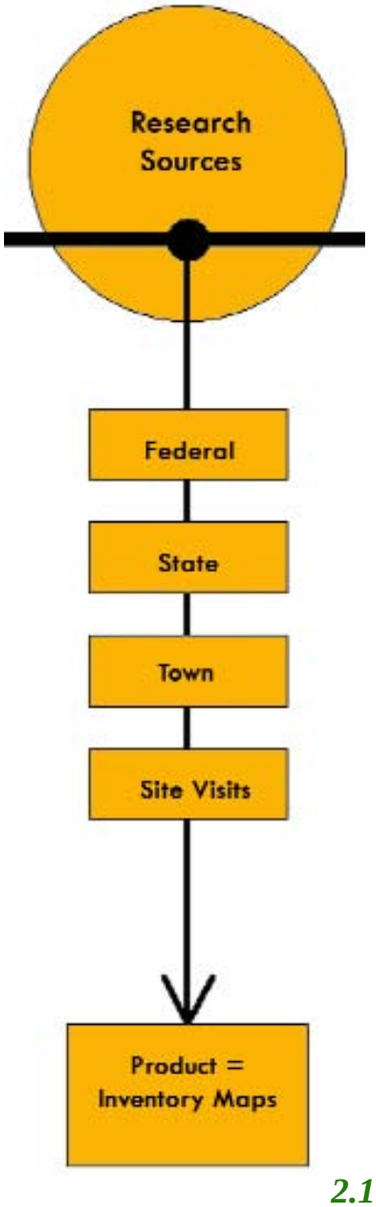
Eight of ten residents strongly or somewhat favor retirement services/communities projects.

More than six out of ten residents are strongly or somewhat in favor of the development of upscale boutique style retail businesses.

The results show that Mansfield residents strongly or somewhat oppose the development of heavy industry projects (86%), department store style retail businesses (52%) and back office operations such as office operations for large companies (49%).

See, "The Public" in 3.0 Analysis Phase for additional information.

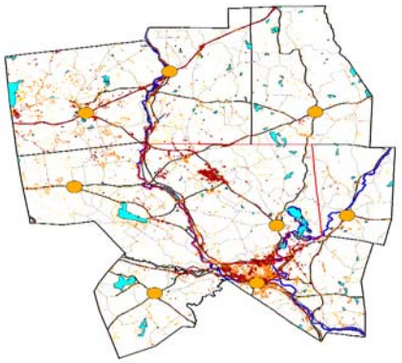
Research Phase:
This phase is characterized as "fact-finding" of natural and cultural characteristics. The maps generated in this phase serve as an inventory. Data is collected from a number of sources including extensive site reconnaissance, public agencies, planning offices, and the internet for GIS based information.



Knowledge will forever govern ignorance: and a people who mean to be their own governors, must arm themselves with the power which knowledge gives.

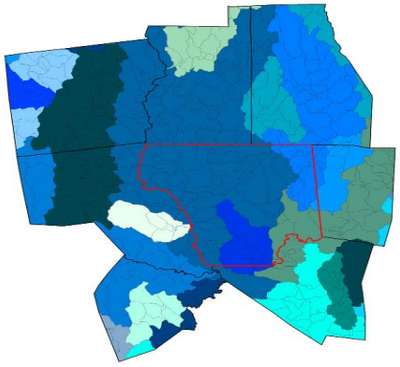
James Madison

2.0 Research Phase



Regional Context

Aerial Photograph

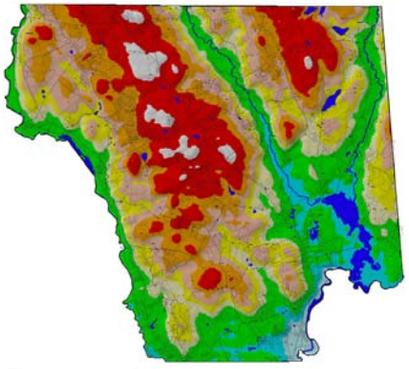


Regional Drainage Basins

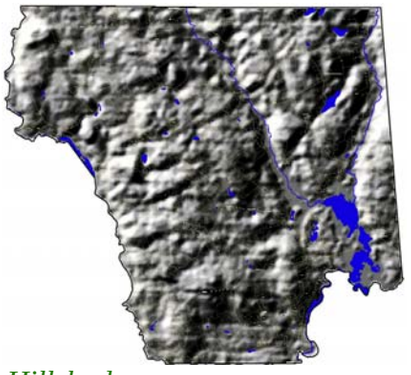
USGS Map

Town Context Features

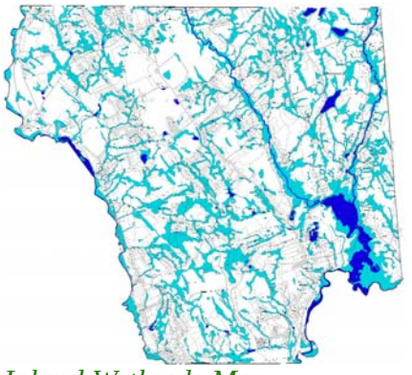
Topography Map



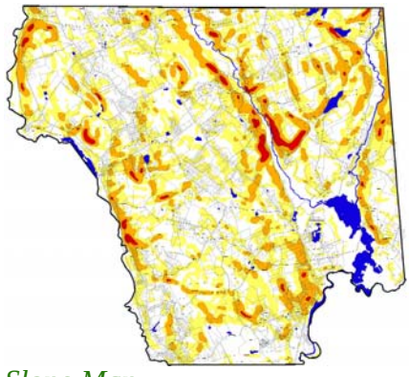
Elevation Map



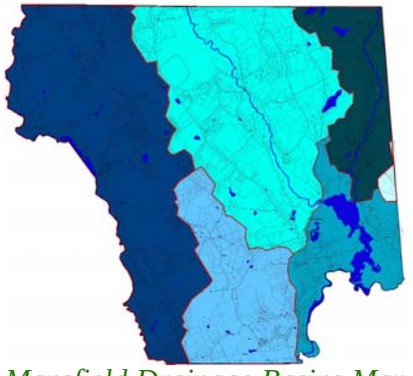
Hillshade



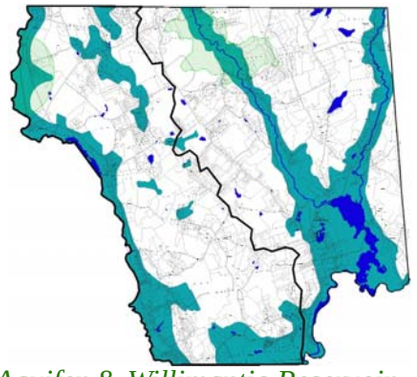
Inland Wetlands Map



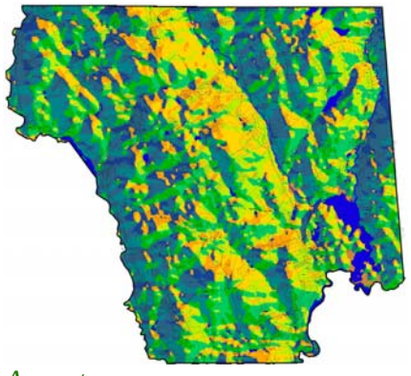
Slope Map



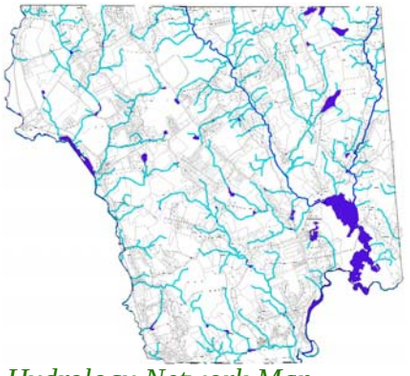
Mansfield Drainage Basins Map



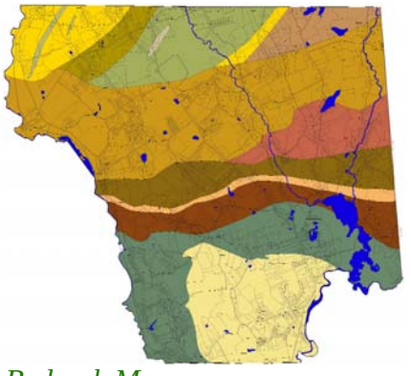
Aquifer & Willimantic Reservoir



Aspect

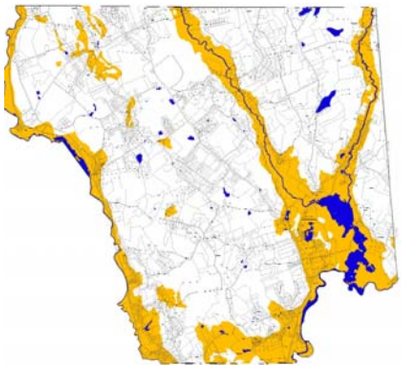


Hydrology Network Map

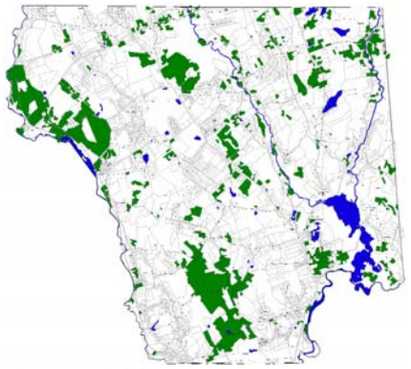


Bedrock Map

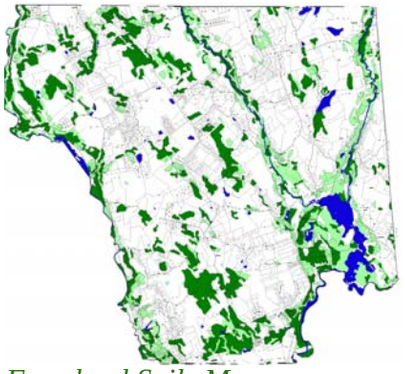
2.0 Research Phase



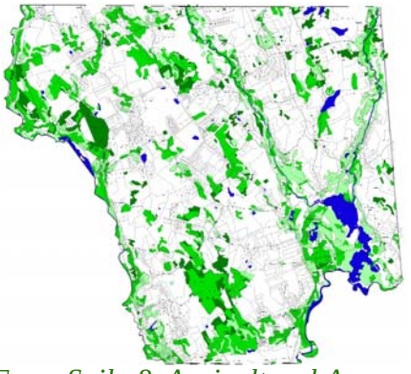
Sand and Gravel Map



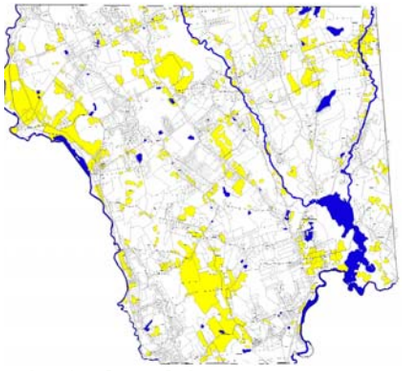
Open Fields Map



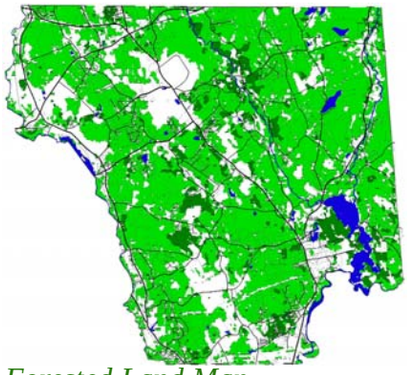
Farmland Soils Map



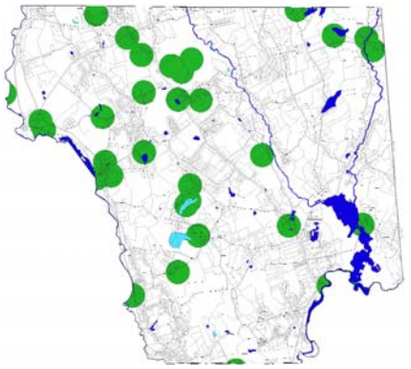
Farm Soils & Agricultural Areas



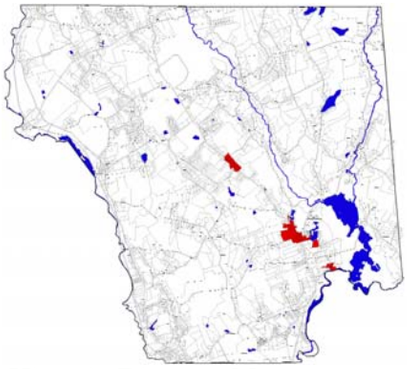
Agricultural Areas Map



Forested Land Map

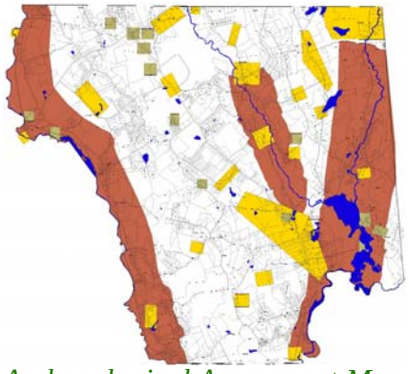


Bio-Diversity Map



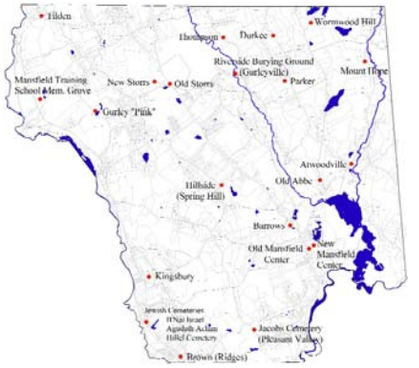
Historic Districts Map

Spring Hill Historic District

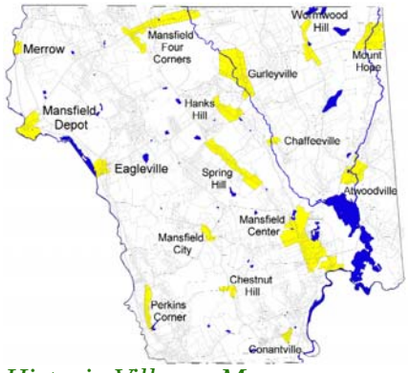


Archaeological Assessment Map

Mansfield Center Historic District

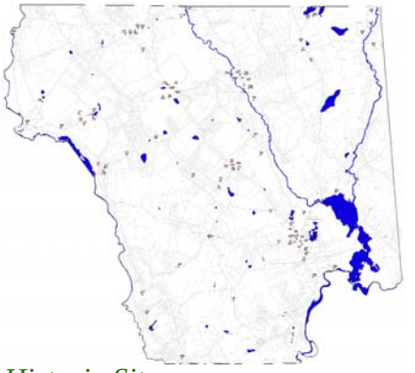


Cemeteries Map



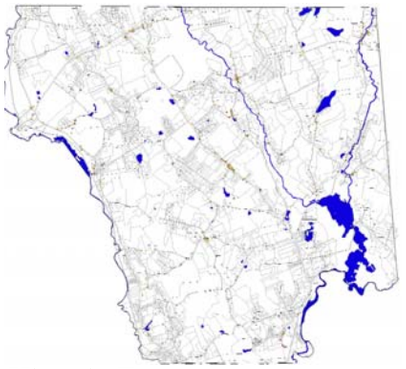
Historic Villages Map

Mansfield Hollow Historic District

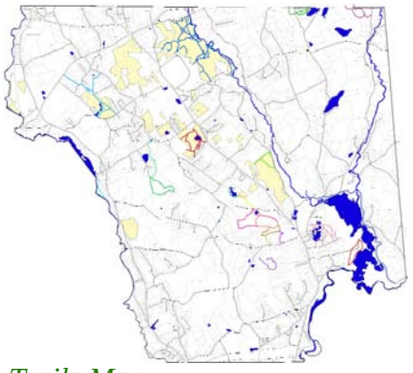


Historic Sites

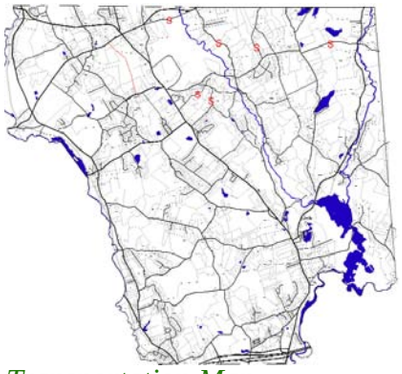
2.0 Research Phase



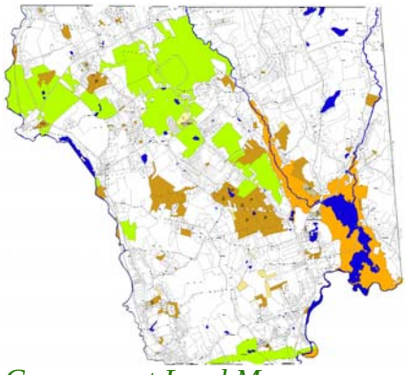
Historic Features



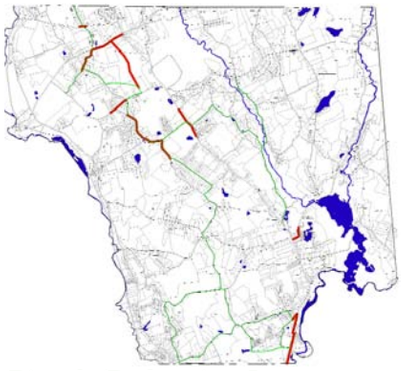
Trails Map



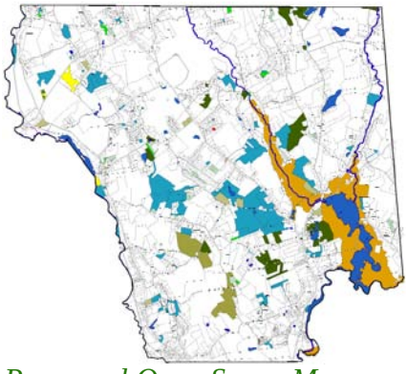
Transportation Map



Government Land Map



Bicycle/Pedestrian Improvement Plan



Preserved Open Space Map

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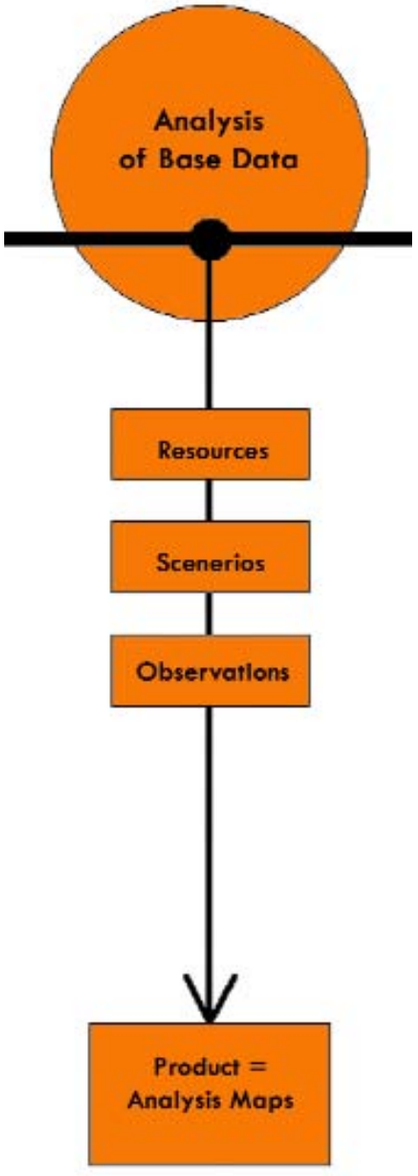
Analysis Phase:
The goal of the analysis phase is to evaluate the data collected during the research phase. In this phase the inventory maps are transformed into maps which identify opportunities and constraints of the site char in relationship to the program statement.

The Analysis Phase has three parts:

Primary Resources

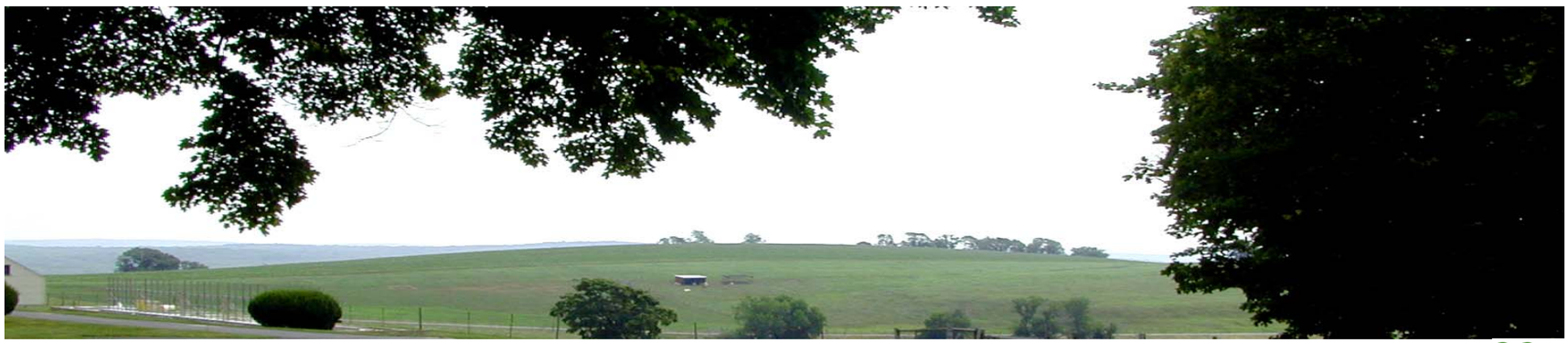
Scenarios

Observations



The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation increased, and not impaired, in value. Conservation means development as much as it does protection.

Theodore Roosevelt



3.0 Analysis Phase:

Primary Resources:

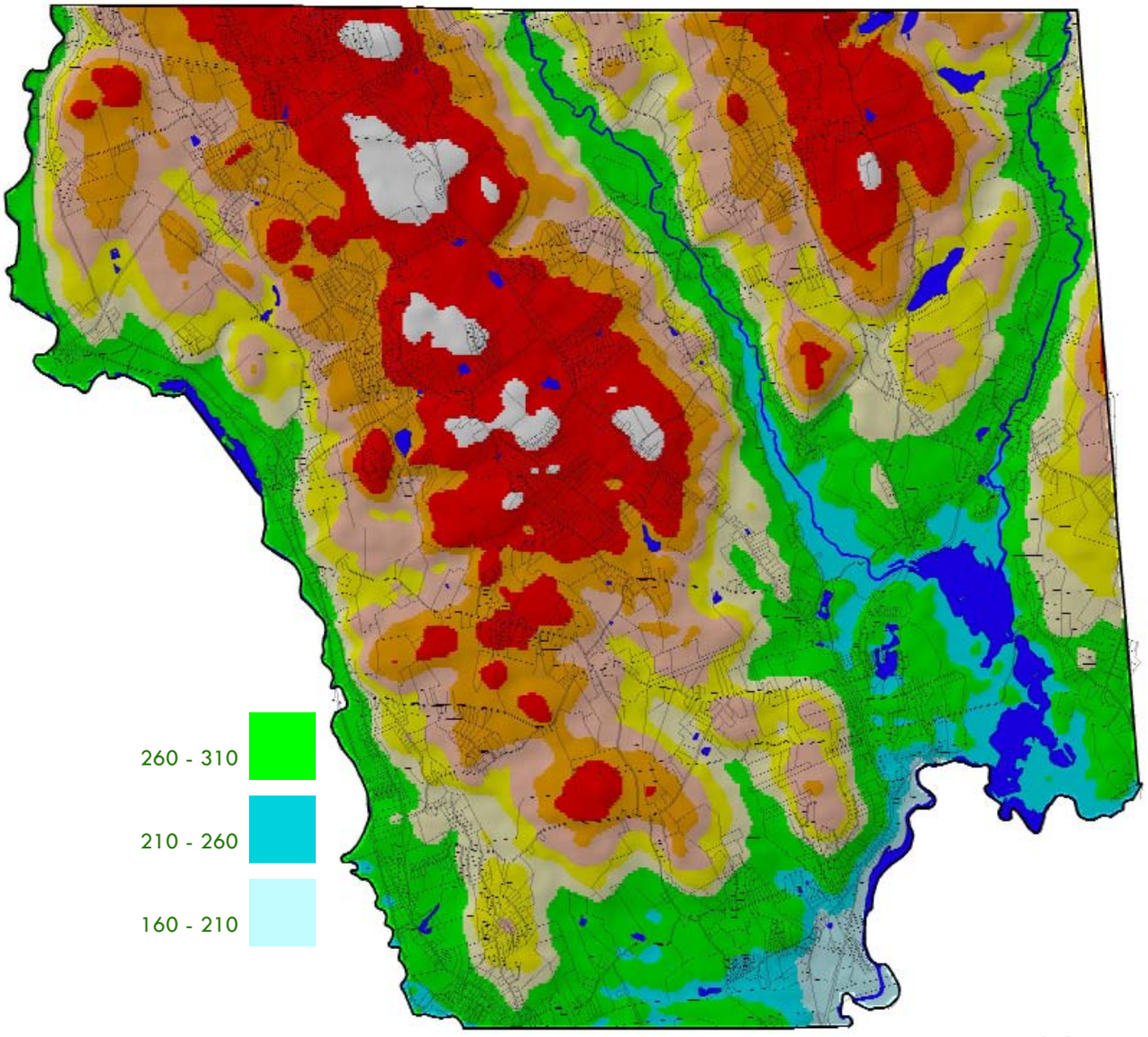
3.3 Topography
3.5 Surficial Water
3.7 Surficial Geology/Soils
3.9 Flora/Fauna
3.11 Cultural
3.13 The "People"

Scenarios:

3.19 Yield Plan
3.21 Forests Size
3.25 Forest Habitat
3.27 Views

Observations:

3.29 Mixed Use Development
3.31 Hill Tops and Views
3.33 Open Space Fragmentation
3.35 Open Space (other issues)



3.3

Primary Sources:

Aerial Photograph/Site specific information from Mansfield Town Planner/1993 Plan of Development

Aerial interpretation by L.A.@ UConn

Base data from DEP

Digital Elevation Model data from the University of Connecticut Map and Geographic Information Center

UConn land designation and configuration from University of Connecticut

Note: For additional Source Info. See Pages A7,A12,A74

Overview: *Mansfield is blessed with varied and dramatic topography resulting in panoramic vistas, rock cliffs, and ideal landscapes for a number of recreational activities. The town's elevation above sea level goes from a low point of 150' to a high point of 775'. That is a 625' difference. For comparison, the state of Louisiana has a difference of 543'!*

Overall pattern: *The town is comprised of two large upland areas bisected by the three major river valleys. Generally the highest parts of town are to the north, north-west with gradual decrease in elevation to the south, southeast part of town. The University of Connecticut sits prominently on the larger western uplands, while the eastern uplands continues to be used for living and farming. The low lands to the southeast are under water as part of the Mansfield Hollow flood control area.*

Road pattern: *Many of the existing major roadways are located where the earliest settlers first created horse and cart paths. Therefore, current roadways are located on lands which were the easiest for the settlers to clear and grade. The lands to the west of the Fenton river valley proved to have less limitations than the lands to the east of the river and the major road system bears this out. Five of the six major roads in town are located to the west of the Fenton. Route 89, the only state road to the east of the Fenton, functions both as a north-south and east-west road.*

3.0 Analysis Phase:

Primary Resources:

3.3 Topography

3.5 Surficial Water

3.7 Surficial Geology/Soils

3.9 Flora/Fauna

3.11 Cultural

3.13 The "People"

Scenarios:

3.19 Yield Plan

3.21 Forests Size

3.25 Forest Habitat

3.27 Views

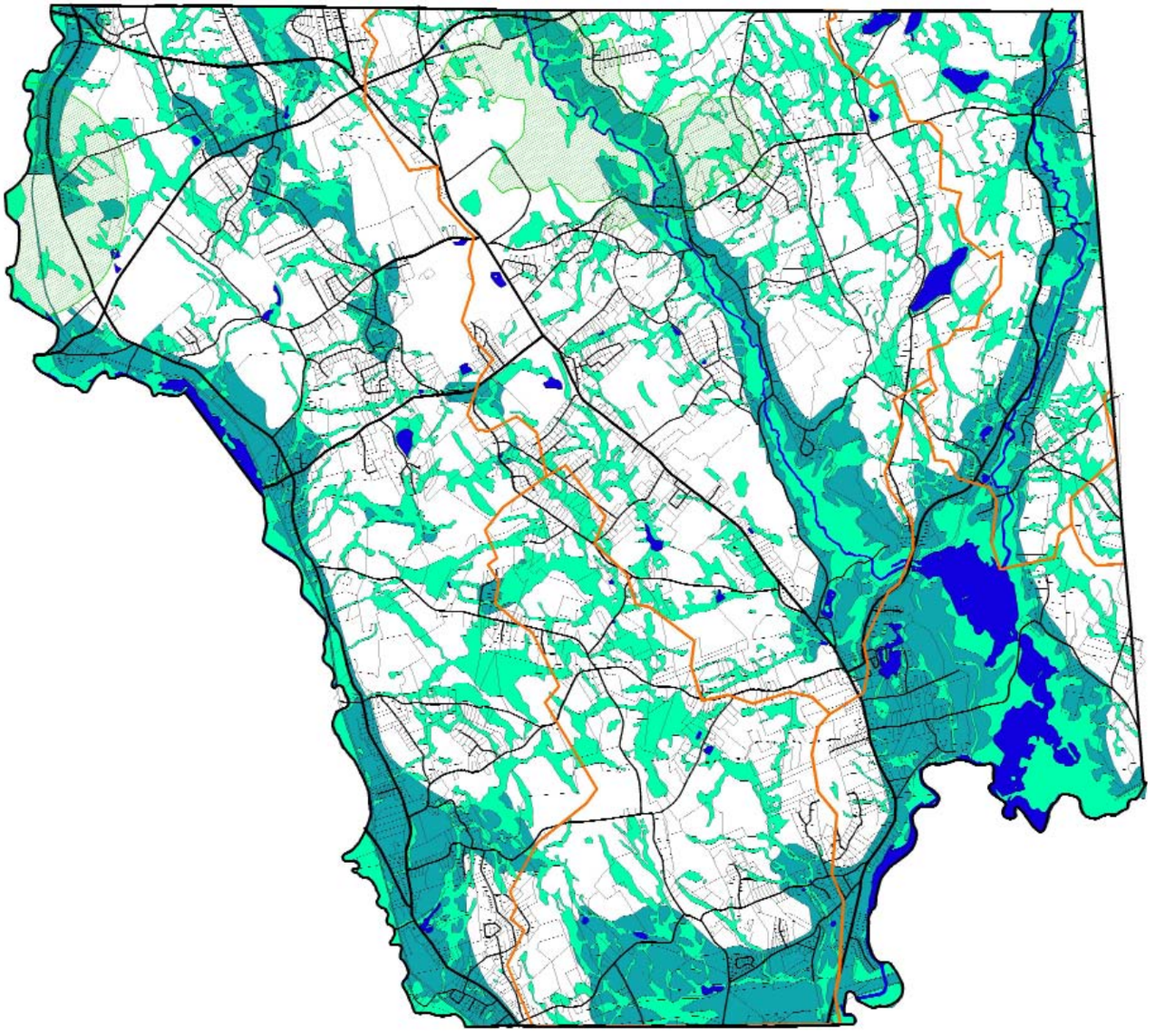
Observations:

3.29 Mixed Use Development

3.31 Hill Tops and Views

3.33 Open Space Fragmentation

3.35 Open Space (other issues)



Primary Sources:

Aerial Photograph/Wetlands/ Site specific information from Mansfield Town Planner/1993 Plan of Development

Aerial interpretation by L.A.@ UConn

Base data from DEP

UConn land designation and configuration from University of Connecticut

Note: For additional Source Info. See Pages A11,A12,A13,A14,A75,A74

Overview: *The Town of Mansfield has a tremendous amount of surficial water resources. The resources include: three major rivers, a complex system of secondary streams and an abundance of wetlands. In fact, wetlands cover 27.2% of the town and when a 50' buffer is added to the wetlands the % increases to 37.8. That is 11,029 acres.*

Overall patterns: *Surface water flows in a north to south direction within six different watersheds. Generally, surface water flows in a southwest and southeast direction and is concentrated into it's three rivers: the Willimantic along the westerly border, the Fenton in the center of town and the Mount Hope located in the eastern part of town. Lowest lying parts of town are part of a Army Corp of Engineers(1 sq mi, on Nachaug R., Max. capacity 79,000 acre-ft. Formed by Mansfield Hollow Dam (78 ft high), built (1952) by Army Corps of Engineers for flood control) flood control project and provides area residents with a multitude of recreation opportunities.*

Wetlands pattern: *The wetlands of Mansfield are unique as compared to many towns of eastern Connecticut. Mansfield has more wetlands(27.2%) as compared to other towns in the area such as Windham (16.5%), Coventry (19.0%), or Willington (13.0%). Also, Mansfield's wetlands are evenly distributed throughout the town, unlike most towns which show areas of high and low wetland occurrences. These wetland characteristics provides a difficult challenge for finding suitable land for development.*

3.0 Analysis Phase:

Primary Resources:

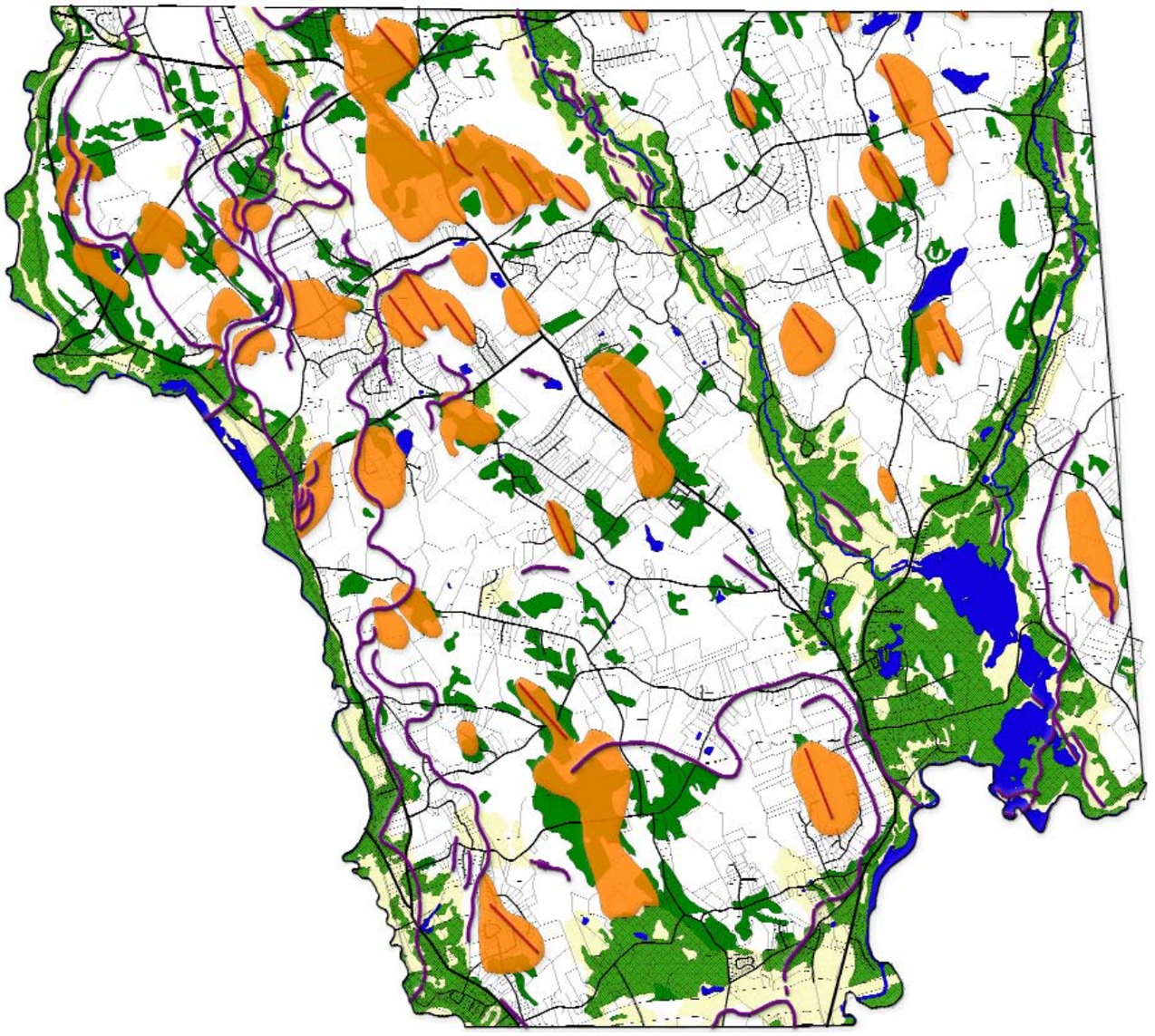
3.3 Topography
3.5 Surficial Water
3.7 Surficial Geology/Soils
3.9 Flora/Fauna
3.11 Cultural
3.13 The "People"

Scenarios:

3.19 Yield Plan
3.21 Forests Size
3.25 Forest Habitat
3.27 Views

Observations:

3.29 Mixed Use Development
3.31 Hill Tops and Views
3.33 Open Space Fragmentation
3.35 Open Space (other issues)



Primary Sources:

Aerial Photograph/Site specific information from Mansfield Town Planner/1993 Plan of Development

Aerial interpretation by L.A.@ UConn

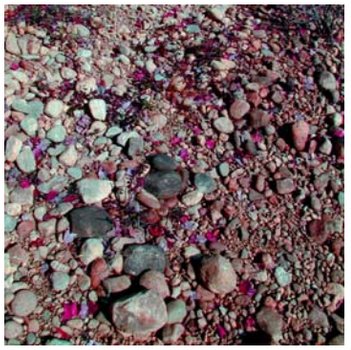
Base data from DEP

UConn land designation and configuration from University of Connecticut

Note: For additional Source Info. See Pages A70,A17,A18,A19,A12,A16,A33,A70, A73

Overview: *Southern New England's landscape is a glacial landscape. During the last Ice Age, huge sheets of ice ground, carved, and deposited all sorts of events and debris. The most significant events include areas of thick till and drumlins. The deposited materials include sand/gravel deposits and eskers.*

Overall patterns: *There is a concentration of eskers and other water related glacial deposits in the northwest corner of town. These features also extend south along the Willimantic river. Sand and gravel deposits underlay the three major river valleys with the most abundant deposits located in the Mansfield Hollow area. Drumlins/thick till are scattered through out the town with a higher concentration being in the north. The most well known drumlin in Mansfield, "Horse Barn Hill", is located on UConn's agricultural campus. "Horse Barn Hill", like most of the town's drumlins, is oriented with it's long dimension running north-south.* ***There are two other locations in town with similar attributes as Horse Barn Hill (drumlins, cleared land , and good farm soils). These areas, which are located in the northwest corner of town (commonly referred to as Greens Farm) and to the south of town (commonly referred to as Sterns Farms) are highly visible and any intensive development would compromise the existing rural imagery.*** *Many of the town's soils have limitations for septic fields. The limitations include shallow depth to bedrock/watertable and the presence of hardpan.*



3.0 Analysis Phase:

Primary Resources:

3.3 Topography
3.5 Surficial Water
3.7 Surficial Geology/Soils
3.9 Flora/Fauna
3.11 Cultural
3.13 The "People"

Scenarios:

3.19 Yield Plan
3.21 Forests Size
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3.29 Mixed Use Development
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3.33 Open Space Fragmentation
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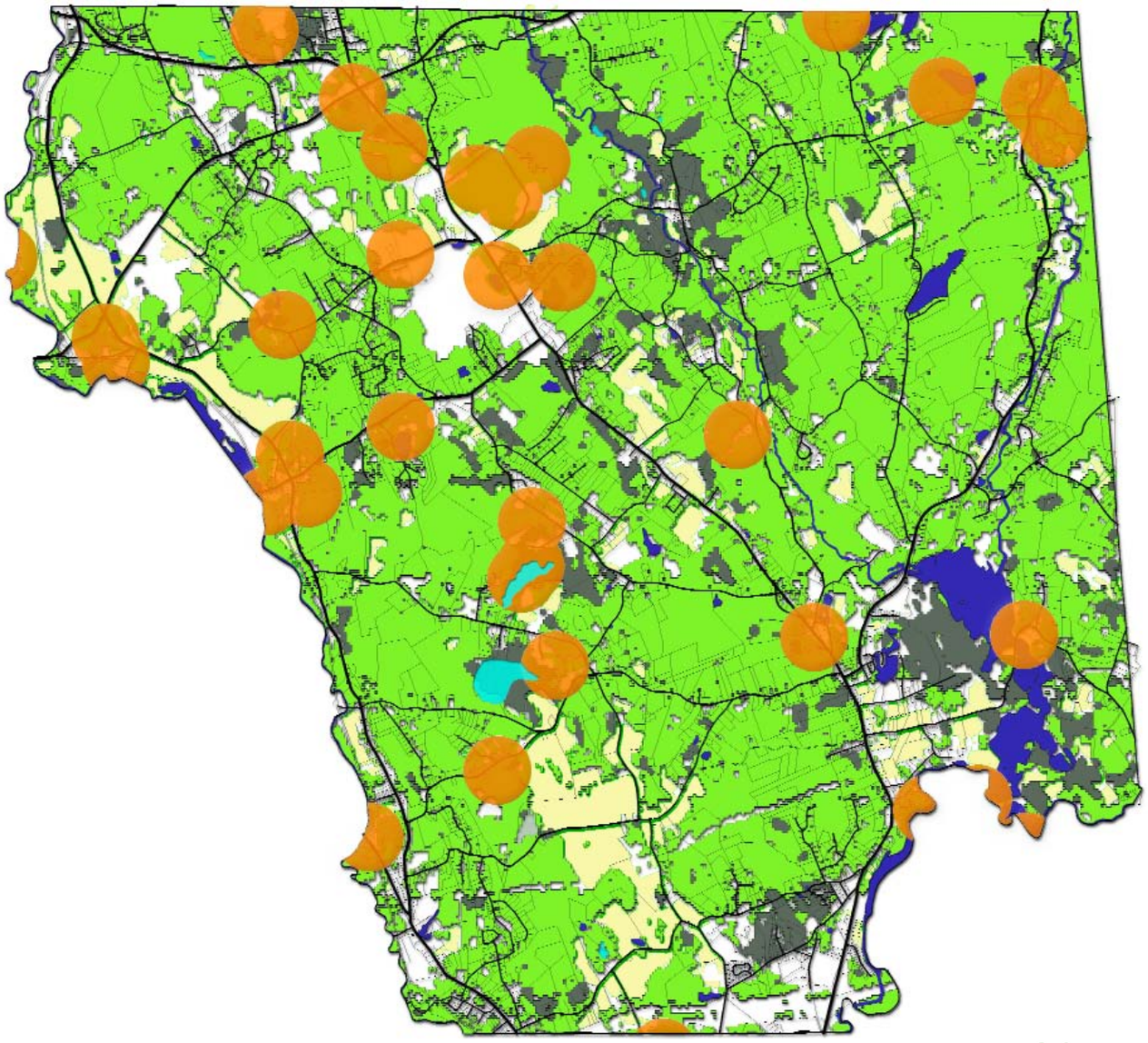


Primary Sources:

Aerial Photograph/Site specific information from Mansfield Town Planner/1993 Plan of Development

Aerial interpretation and photogrammetry by L.A.@ UConn

Base data and 1997 Land use Landcover data from DEP

UConn land designation and configuration from University of Connecticut

Note: For additional Source Info. See Pages A33,A22,A21,A19,A12,A71

Overview: *In the mid 1850's, 90% of Mansfield was devoid of forests. The early settlers cleared the landscape for farming, leaving only the steepest slopes and the wettest swamps untouched. Today, 70% of the town is covered by forests. The remaining 30% is a combination of cleared farm lands, open water, roadways and other types of development.*

Overall patterns: *Most of the existing forests are a deciduous mix comprised of Maple, Oak, Ash, and Birch . The largest coniferous forests are located at Mansfield Hollow Reservoir area and along the banks of the Fenton river adjacent to UConn A unique wetland type, the "White Cedar Swamp" has two areas of concentration in town. The one area, along the Fenton River, is also the area of coniferous forests. The other area is located south of Route 275 equidistant between Route 32 and Route 195.*

Areas of "Special Concern", which are general areas of concern with regards to state and federally listed endangered, threatened, special concern species and significant natural communities"(Conn, DEP) as mapped by DEP , are located through out the town with the highest concentrations being west of the Fenton River.

3.0 Analysis Phase:

Primary Resources:

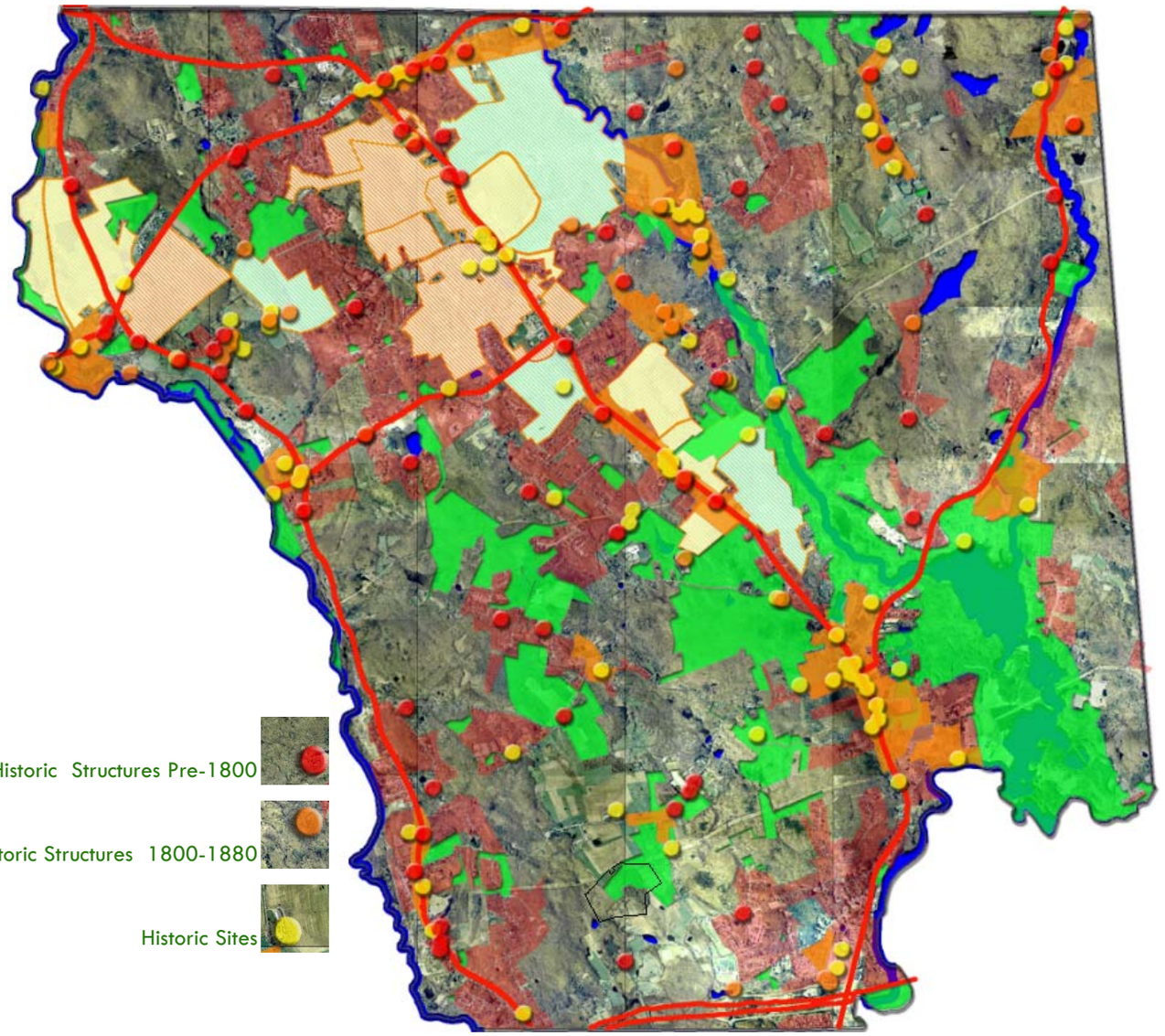
3.3 Topography
3.5 Surficial Water
3.7 Surficial Geology/Soils
3.9 Flora/Fauna
3.11 Cultural
3.13 The "People"

Scenarios:

3.19 Yield Plan
3.21 Forests Size
3.25 Forest Habitat
3.27 Views

Observations:

3.29 Mixed Use Development
3.31 Hill Tops and Views
3.33 Open Space Fragmentation
3.35 Open Space (other issues)



Primary Sources:

Aerial Photograph/ All historic data/ Site specific information from Mansfield Town Planner/1993 Plan of Development

Aerial interpretation/ Existing developed areas by L.A.@ UConn

Base data from DEP

UConn land designation and configuration from University of Connecticut

Note: For additional Source Info. See Pages A33,A4,A12,A71,A24,A25,A26,A27,A28,A29,A30,A31,A32,A37

Overview: *The cultural patterns upon the land have responded to the natural "lay of the land". New Englanders have traditionally occupied fertile river valleys, areas adjacent to the river valleys and strategically located uplands.*

Overall patterns: *Mansfield is no exception to this New England pattern. The majority of the historic development either follows the three major north-south rivers; the Willimantic, Fenton and Mount Hope, or is located on the two prominent upland areas; one to the west of Route 195 and the other to the east.*

Road pattern: *The majority of the town's primary (state) roads parallel the river valleys running north-south, so the town is well served traveling in these directions via Route 32, 195, and 89. Conversely, the state roads running east-west, Route 44, 32 and 6 are along the edge of town and do not provide effective, primary road service for most of the town in these directions.*

Protected open space: *The Town of Mansfield is blessed with a diverse and bountiful landscape. The town and state has done an admirable job in protecting unique natural features such as the Mansfield Dam, Wolf Rock and Fifty Foot Cliff. Protected open space is an impressive 15.3% of the town and will be more functional as "gaps" between protected space is also protected to reduce the amount of existing fragmentation.*

Residential Land Uses: *The majority of land most suited for development has been developed. The land now being developed is less suitable for development and is in areas which are outside of the traditional development patterns. Therefore, future development patterns, if not modified, will occur in areas which will substantially degrade the existing semi-rural town character, further fragment natural wildlife corridors and create demands on town infrastructure which will not easily be met.*

3.0 Analysis Phase:

Primary Resources:

3.3 Topography
3.5 Surficial Water
3.7 Surficial Geology/Soils
3.9 Flora/Fauna
3.11 Cultural
3.13 The "People"

Scenarios:

3.19 Yield Plan
3.21 Forests Size
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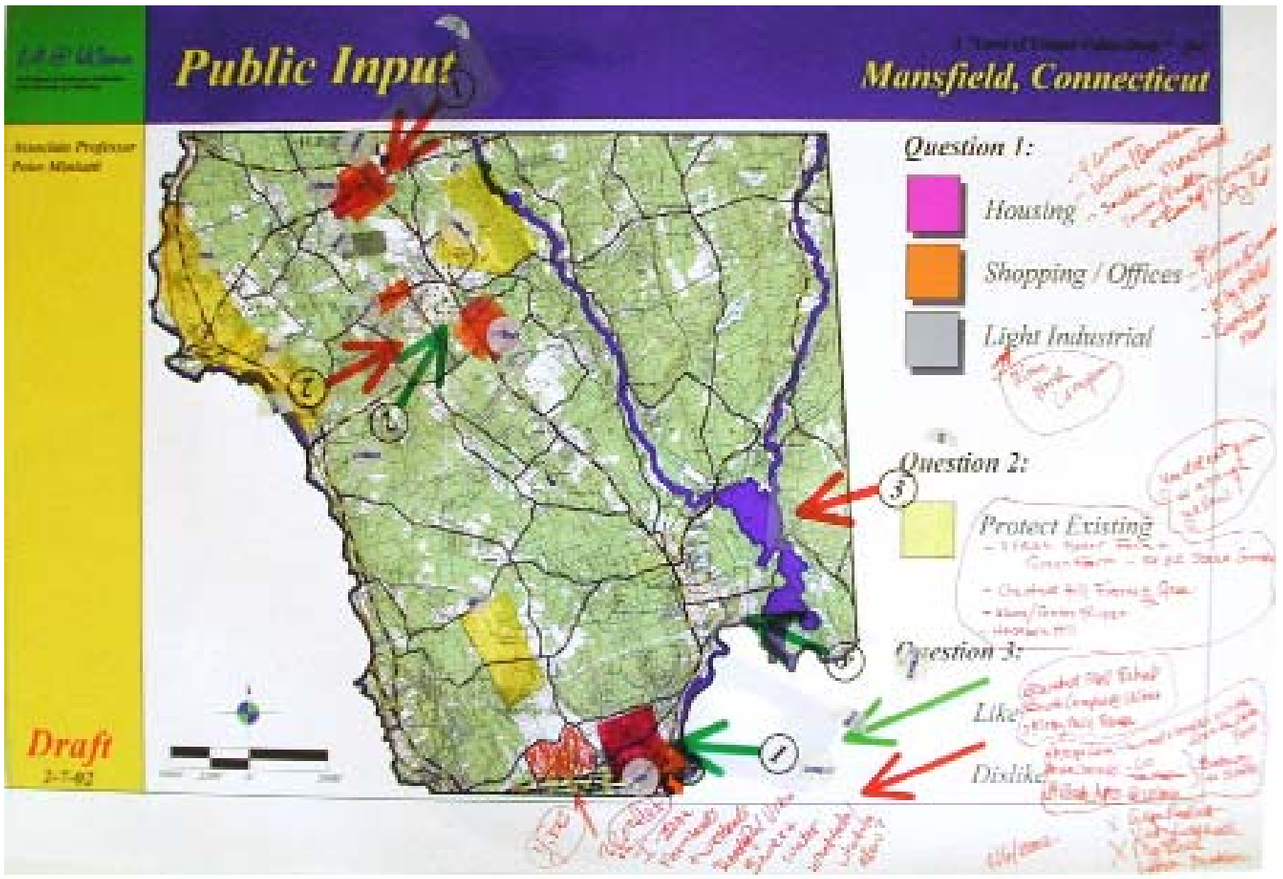


Public Work Session

At the first Public Presentation, Associate Professor Peter Miniutti administered a"working session" where the public, working in small teams, created their vision for Mansfield. Following are the results.

<u>Question 1:</u>

Assuming a moderate rate of growth over the next five years, where would you like to see "sensible" development occur ? Please choose locations for housing, retail / office, and light industrial.

<u>Consensus of groups:</u>

New Housing should be developed in and around Downtown Storrs and Mansfield Four Corners. Retail development would be best located in and around downtown Storrs, Mansfield Four Corners, and East Brook Mall. It was also felt that new light industrial would be best located in the Southern portion of town near Route 6 or Route 32. A general concern for the location and or appropriateness of the location of a new light industrial zone was expressed.

<u>Question 2</u>:

What existing town features should we protect? Both natural and manmade features can be considered.

<u>Consensus of groups:</u>

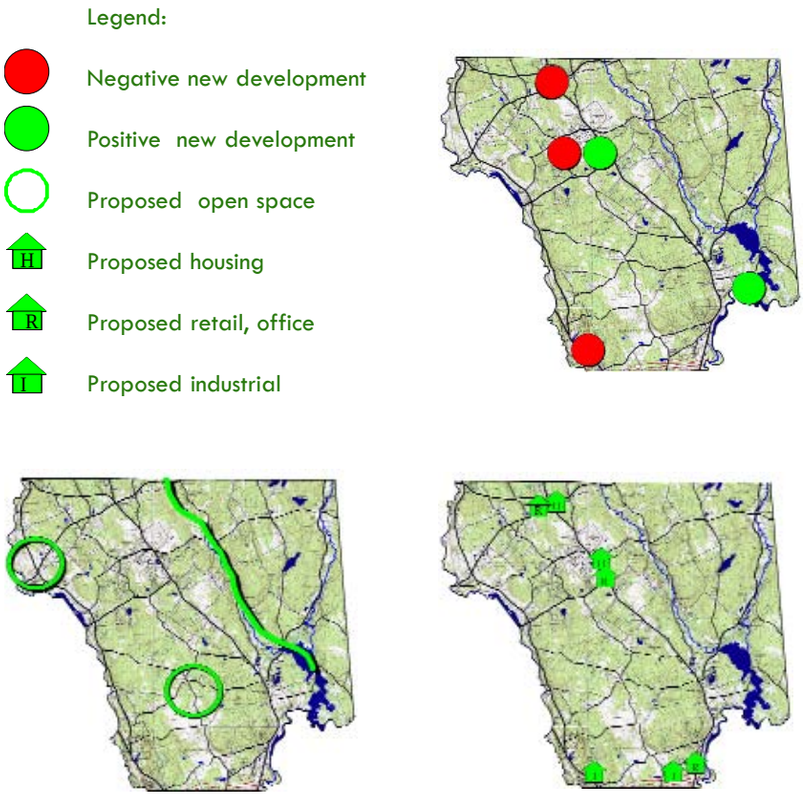
In general the participants believed that there was not enough protected open space in town. The groups did agree that the Chestnut Hill/ Sterns farm areas, the area in and around Route 44 and 32 intersection and the Fenton river valley should be protected.

<u>Question 3:</u>

Since 1997+ (last five years), what changes to your town do you like or dislike? Show a maximum of 3 for each.

<u>Consensus of groups:</u>

Generally, the participants felt that positive new development ranged from historic re-use (Kirby Mill), to new UConn projects, and that negative new development ranged from the Four Corners to Route 32 to UConn projects.



DRAFT QUESTIONNAIRE FOR MANSFIELD RESIDENTS

SAMPLE INTRODUCTION: The Town of Mansfield is interested in learning your opinions about where you live. The results of the study will be used to _____. There are no right or wrong answers and all results will be summarized so no one will know your specific answers. Thank you for your cooperation!

I. Mansfield of the Future:

1. Would you say Mansfield is:
1. Growing Too Fast 2. Growing at the right rate 3. Not growing at all 4. Not growing fast enough

2. How well does recent development in town fit the character of Mansfield?
1. Fits very well 2. Fits somewhat well 3. Does not fit well 4. Fits very poorly

3. How strongly do you approve or disapprove of the rate of Mansfield's growth?
1. Strongly approve 2. Approve 3. Disapprove 4. Strongly disapprove

4. How concerned are you about future development in Mansfield?
1. Very concerned 2. Concerned 3. Unconcerned 4. Very unconcerned

5. Are there any additional community resources or activities you would like to see built or developed?
1. Yes (SPECIFY) _____ 2. No

6. There are a number of types of potential economic development projects that could be pursued by a town. I am going to read you a list of these types of development and I would like you to state whether you favor or oppose that type of development. (PROBE STRONGLY/SOMEWHAT)

		1=Strongly favor	*2=Somewhat favor*	*3=Somewhat oppose*	*4=Strongly oppose*
a.	*Home business*	*1*	*2*	*3*	*4*
b.	*Recreation based businesses (camping, sports camps, etc.)*	*1*	*2*	*3*	*4*
c.	*Tourism/heritage businesses (designed to attract visitors to points of interest and natural surroundings)*	*1*	*2*	*3*	*4*
d.	*Upscale boutique style retail businesses*	*1*	*2*	*3*	*4*
e.	*Department store style retail businesses*	*1*	*2*	*3*	*4*
g.	*Back office operations (office operations for large companies)*	*1*	*2*	*3*	*4*
h.	*Retirement services / communities*	*1*	*2*	*3*	*4*
i.	*Small-lot residential housing development*	*1*	*2*	*3*	*4*
j.	*Heavy industry*	*1*	*2*	*3*	*4*
k.	*Light industry / high -tech industry*	*1*	*2*	*3*	*4*
l.	*Large-lot residential states*	*1*	*2*	*3*	*4*
m.	*Agricultural*	*1*	*2*	*3*	*4*

II. Your Residence:
7. How would you rate your satisfaction with the following:

		1=Extremely satisfied	*2=Very satisfied*	*3=Somewhat satisfied*	*4=Not very satisfied*	*5=Not at all satisfied*
a.	*The physical appearance of your property*	*1*	*2*	*3*	*4*	*5*
b.	*The roads near your residence*	*1*	*2*	*3*	*4*	*5*
c.	*Your neighborhood*	*1*	*2*	*3*	*4*	*5*

III. Town of Mansfield
8. What is your opinion of the town of Mansfield?
1. Very favorable 2. Favorable 3. Unfavorable 4. Very unfavorable

9. What words might you use to describe Mansfield to someone who has never visited Mansfield?

_____

10. Please list what you consider to be a POSITIVE characteristic of Mansfield.

_____

11. Please list what you consider to be a NEGATIVE characteristic of Mansfield.

_____

12. What do you consider to be your FAVORITE PLACE in the town of Mansfield?

_____

12a. What do you consider to be your LEAST FAVORITE PLACE in the town of Mansfield?

_____

13. What do you consider to be your FAVORITE VIEW in the town of Mansfield?

_____

13a. What do you consider to be your LEAST FAVORITE VIEW in the town of Mansfield?

_____

Demographic Questions:

14. How long have you lived in Mansfield? l___l___l

15. What initially brought you to Mansfield?

1. I was born here/moved here with my family 4. Employment in town/area
2. To attend UCONN 5. Wanted to relocate to Mansfield
3. Employment at UCONN 6. Other _____

16. In what year were you born? Year of birth: l___l___l___l___l

17. What is your occupation or field of employment?
Occupation: _____

18. Do you currently own or rent your residence?
1. Own 2. Rent

INTERVIEWER TO RECORD BY OBSERVATION

19. Describe the location of the subject's residence. 1. Located in a neighborhood of similar type homes
2. Located outside of a neighborhood
3. Located in an apartment or condominium complex
4. Other _____

20. What is the subject's gender?
1. Male 2. Female

21. Please record the subject's address?

Mansfield

Executive Summary:

The Town of Mansfield commissioned the University of Connecticut to conduct a survey of Mansfield residents to evaluate attitudes towards land issues and development. A total of 215 randomly selected residents were interviewed via in-person interviews.

The following are highlights of the survey findings:

More than half (55%) of Mansfield residents think that the town is growing at the right rate, while almost one quarter (23%) believe Mansfield is growing too fast. Most residents of Mansfield (76%) believe that recent development in town fits the character of Mansfield well and seven out of ten residents approve of the rate of growth and development at the University of Connecticut.

More than six out of ten Mansfield residents also approve the rate of growth and development in the commercial areas (the Four Corners, Route 195 between Dog Lane and the East Brook Mall and in the rural areas of town). The results also indicate that nine in ten residents have a favorable opinion of the Town of Mansfield.

The results of the survey also indicate that nearly seven out of ten (69%) of Mansfield residents are concerned about the development of Mansfield. Four out of ten residents would like to see additional resources or activities built or developed in Mansfield.

Residents were also asked to rate a number of potential economic development projects that could be persued by the Town of Mansfield. Nine in ten residents strongly or somewhat favor the development of agricultural projects and more than eight out of ten residents strongly or somewhat favor home businesses, recreation based businesses such as camping, sports camps, or the development of tourism/heritage businesses designed to attract visitors to points of interest and natural surroundings. The results also indicate that eight of ten residents strongly or somewhat favor retirement services/communities projects.

More than six out of ten residents are strongly or somewhat in favor of the development of upscale boutique style retail businesses and more than half (54%) strongly or somewhat favor the development of light industry/high-tech industry.

The results show that Mansfield residents strongly or somewhat oppose the development of heavy industry projects (86%), department store style retail businesses (52%) and back office operations such as office operations for large companies (49%).

A majority (75%) of the Mansfield residents are extremely or very satisfied with their neighborhood and six out of ten residents are extremely or very satisfied with the physical appearance of their property. More than half of the residents (58%) are also extremely or very satisfied with the roads near their residences.

While two out of ten residents surveyed were born in Mansfield, 47% of Mansfield residents came to Mansfield either for employment purposes (employment at UConn or in the Town/area or to attend school at UConn.

The results of the survey also show that nine out of ten residents own their homes. Eight out of ten residents have their home located in neighborhoods of similar type homes. The results also indicate that six out of ten residents have been in Mansfield for more than ten years.

Executive Summary

The Town of Mansfield commissioned the University of Connecticut to conduct a survey of UConn students to evaluate attitudes towards land issues and development. A total of 353 randomly selected students were interviewed.

The following are highlights of the survey findings:

The survey finds that seven out of ten students consider the recent development in town fits the character of Mansfield well and approve the rate of growth and development in the commercial areas (the four corners, Route 195 between Dog Lane and the East Brook Mall).

The majority of students (80%) also approve of the rate of growth and development at the University of Connecticut while six out of ten approve the rate of growth and development in the rural areas of town.

With regard to the Mansfield development pace, the results show that while 48% of students think that Mansfield id growing too fast (4%) or growing at the right pace (44%), (31%) think that Mansfield is not growing at all and (18%) think that Mansfield is not growing fast enough.

Six out of ten students have a favorable opinion of the Town of Mansfield. The results of the survey also show that four out of ten students are concerned about the future development in Mansfield and would like to see additional community resources or activities built or developed in Mansfield.

Students were also asked to rate a number of potential economic development projects that could be pursued by the Town of Mansfield. More than nine in ten residents strongly or somewhat favor the development of restaurants and recreation based businesses such as camping, sports camps, etc. Eight out of ten students also favor the development of tourism/heritage businesses designed to attract visitors to points of interest and natural surroundings.

More than seven out of ten students also are strongly or somewhat in favor of the development of department store style retail businesses and upscale boutique style retail businesses. Almost seven out of ten students (69%) also are in favor of small-lot residential housing development.

The results show that students strongly or somewhat oppose the development of heavy industry projects (74%), back office operations such as office operations for large companies (47%) and large-lot residential estates (47%).

Most (70%) of students surveyed are permanent residents of Connecticut. The results of the survey also indicate that eight out of ten students live on campus and that 37% of the students have been at Storrs for more than four semesters.

3.0 Analysis Phase:

Primary Resources:

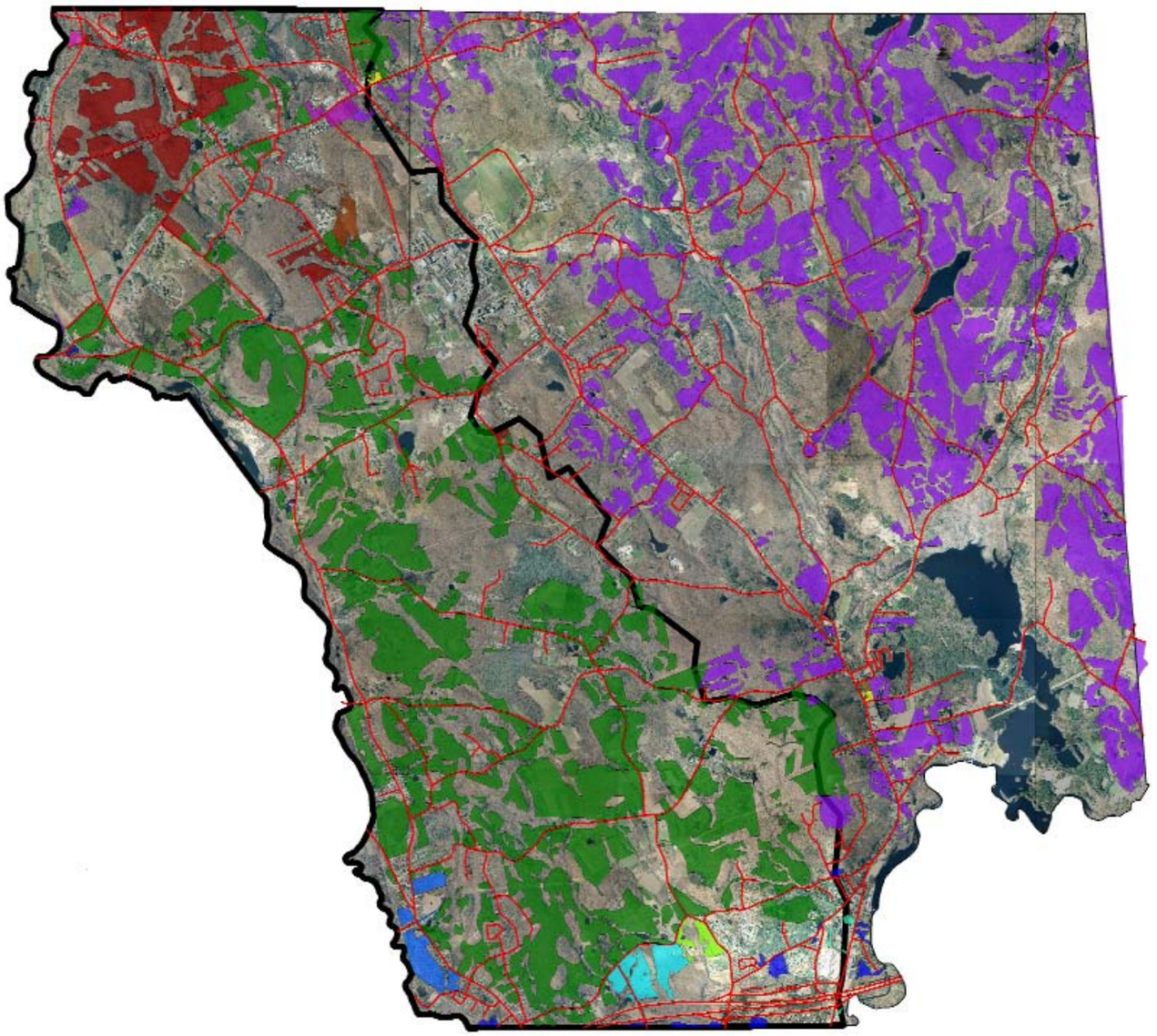
3.3 Topography
3.5 Surficial Water
3.7 Surficial Geology/Soils
3.9 Flora/Fauna
3.11 Cultural
3.13 The "People"

Scenarios:

3.19 Yield Plan
3.21 Forests Size
3.25 Forest Habitat
3.27 Views

Observations:

3.29 Mixed Use Development
3.31 Hill Tops and Views
3.33 Open Space Fragmentation
3.35 Open Space (other issues)



Roads

Aerial Photograph

2 Acre Zoning/Yield Potential

1 Acre Zoning/Yield Potential

Note: all other colors are zoned non-residential

Primary Sources:

Aerial Photograph/Site specific information from Mansfield Town Planner/1993 Plan of Development

Aerial interpretation and yield potentials by L.A.@ UConn

Base data from DEP

UConn land designation and configuration from University of Connecticut

Note: For additional Source Info. See Pages A33,A4,A71,A72,A37,A36,A8,A13,A71 ,A72,A74,A76

Question: How many additional single family houses can be built in Mansfield?

Answer: About 3,000

So what? *What would Mansfield look like if the existing number of houses was almost doubled? There are now about 4,000 single family houses and this number could almost double. If the existing development patterns are not modified, some of the future development will occur on lands with high scenic and ecologic value.*

Scenario assumptions*:

General:
1. Current land use regulations were used
2. Only residential, single family building lots are tested.

Undevelopable lands include:
1. All parcels of land that currently are being used in a land use deemed stable and little or no expansion seems likely
2. Protected open space
3. UConn lands
4. Existing roads
5. Open water
6. Wetlands and a 50' buffer
7. Slopes greater than 15%

The numbers:

Town Size:
29,175 acres

Develepable land:
8,273 acres

Developable land used for this Yield Plan:
*4,137 acres**

Potential 2 acre lots given existing zoning:
978

Existing 2 acre lots:
2,058

Potential 1 acre lots given existing zoning: 2,012

Existing 1 acre lots:
2,193

300 acres for other potential development i.e. industrial, institutional, commercial, etc.

**Note: The amount of developable land as determined by the yield plan does not take into certain detailed land features (parcel configuration, depth to bedrock, soil classifications, etc.) which will reduce the actual number of buildable lots. For this reason, we have assumed that 50% of the, "Developable land remaining" is, in fact, suitable for building lots.*

3.0 Analysis Phase:

Primary Resources:

3.3 Topography
3.5 Surficial Water
3.7 Surficial Geology/Soils
3.9 Flora/Fauna
3.11 Cultural
3.13 The "People"

Scenarios:

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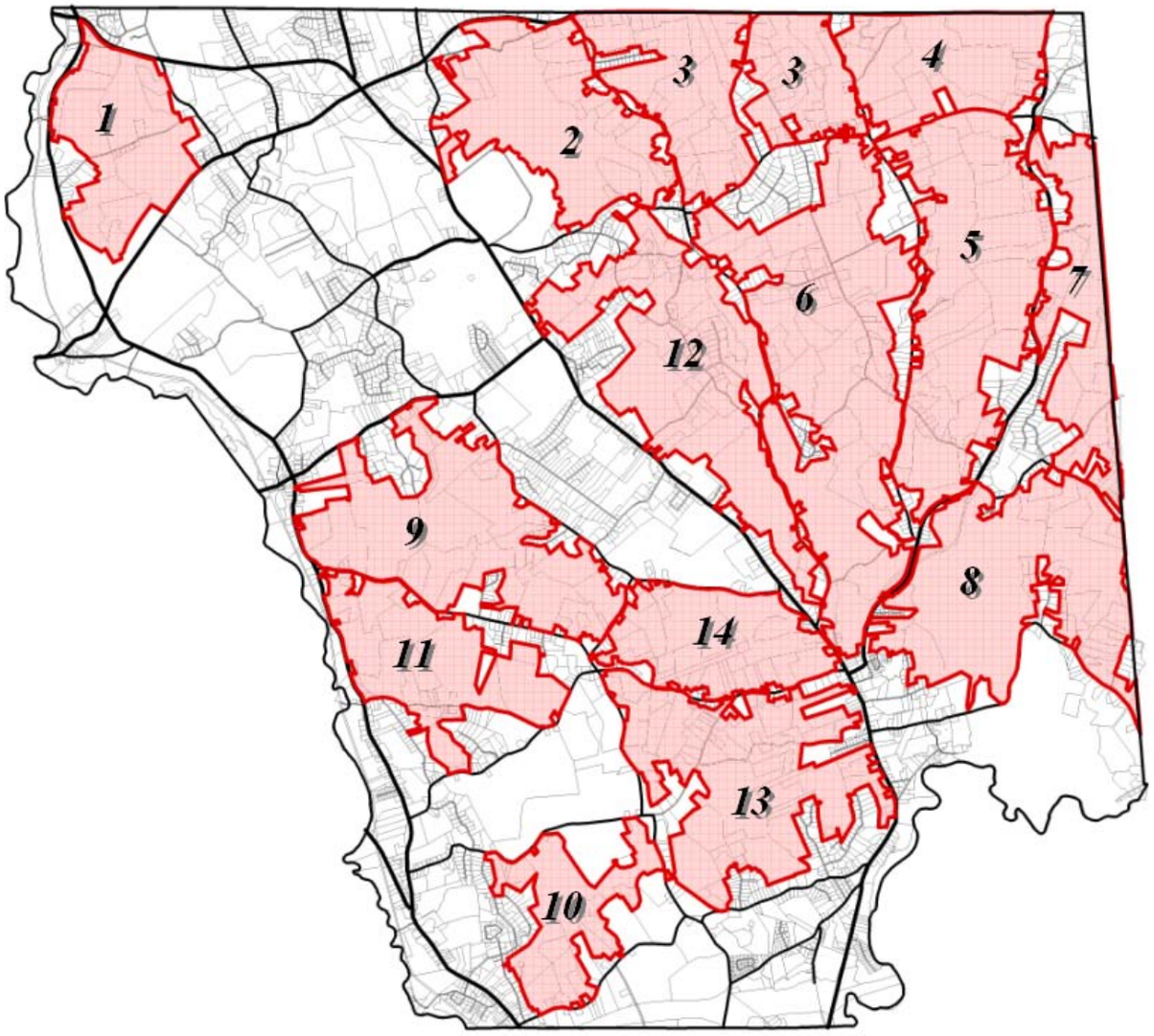


Primary Sources:

Aerial Photograph/Site specific information from Mansfield Town Planner/1993 Plan of Development

Aerial interpretation of large forest tracts by L.A.@ UConn

Base data from DEP

UConn land designation and configuration from University of Connecticut

Question: How many significant forest tracts are in Mansfield?

Answer: 14

So what? *Fragmentation of forests and wildlife habitat is a growing concern as development continues to cut into existing natural areas. It is important to protect existing forests of significant size. Fortunately, Mansfield still has plenty of large forest tracts which can be protected.*

Scenario assumptions:

1. Total forest area is greater than 500 acres.
2. Overall Density is less than 4%
3. Arterial and collector roads act as edges and create boundaries between sections

The numbers:

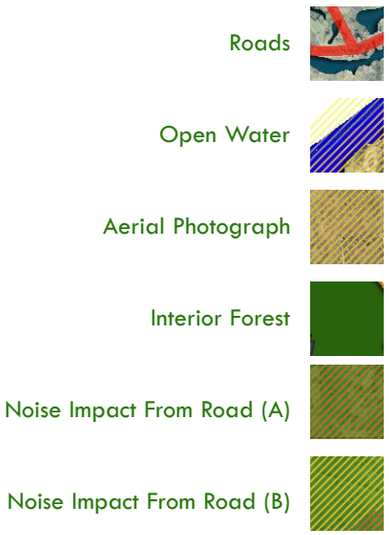
Town Size:
29,175 acres

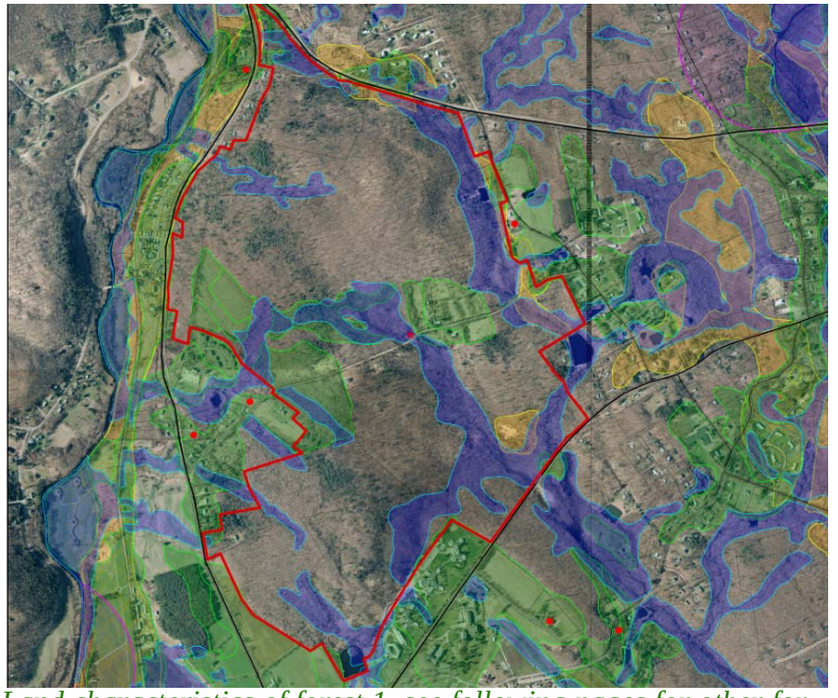
Total forest cover:
20,038 acres

Total significant forest:
13,446 acres

Total number of significant forest tracts:
14

Note: For additional Source Info. See Pages A33,A4,A21,A74





Land characteristics of forest 1. see following pages for other forest tracts. See A-51 of appendix for source info.

3.0 Analysis Phase:

Primary Resources:

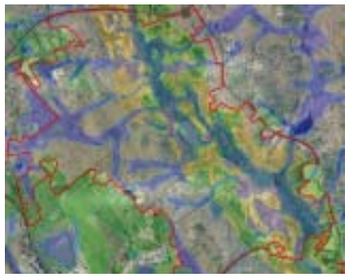
3.3 Topography
3.5 Surficial Water
3.7 Surficial Geology/Soils
3.9 Flora/Fauna
3.11 Cultural
3.13 The "People"

Scenarios:

3.19 Yield Plan
3.21 Forests Size
3.25 Forest Habitat
3.27 Views

Observations:

3.29 Mixed Use Development
3.31 Hill Tops and Views
3.33 Open Space Fragmentation
3.35 Open Space (other issues)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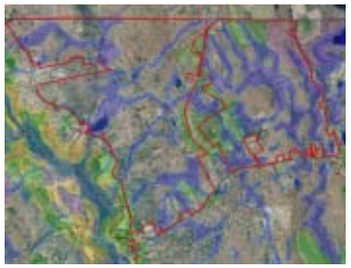
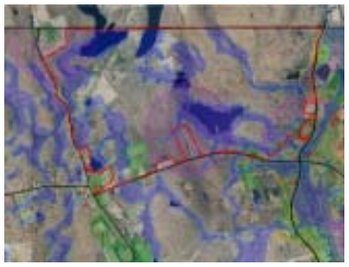

Forest 3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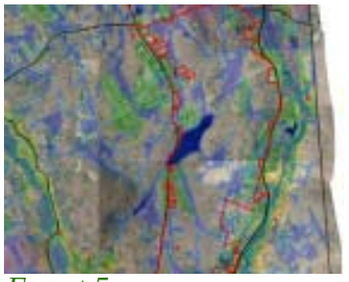
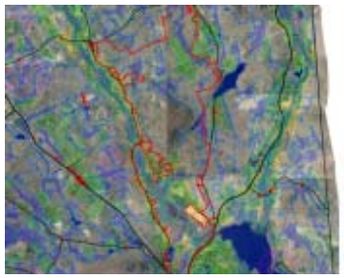
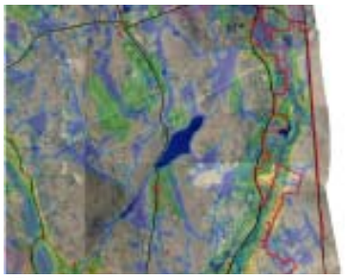
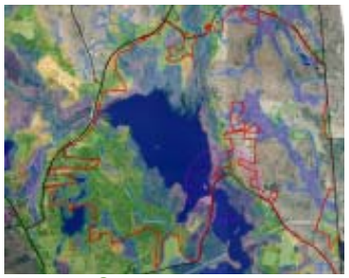
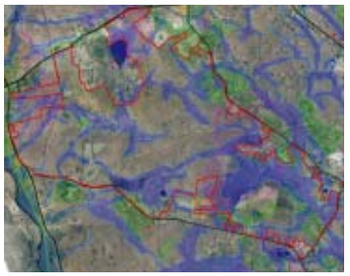

Forest 5

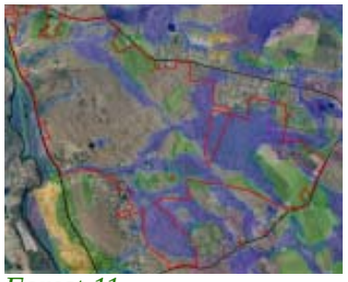

Forest 6


Forest 7

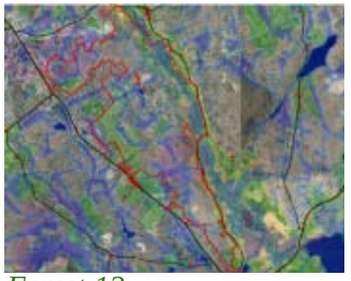

Forest 8


Forest 9

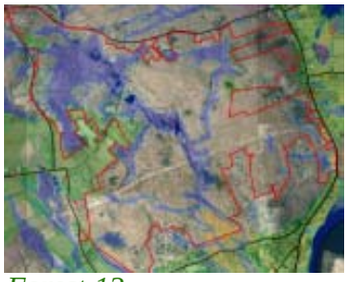
Forest 10



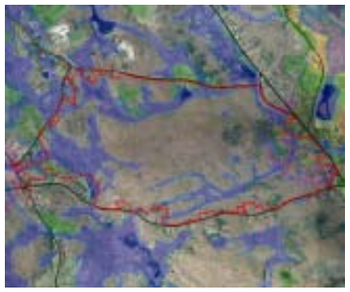
Forest 11



Forest 12



Forest 13



Forest 14

3.0 Analysis Phase:

Primary Resources:

3.3 Topography
3.5 Surficial Water
3.7 Surficial Geology/Soils
3.9 Flora/Fauna
3.11 Cultural
3.13 The "People"

Scenarios:

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3.25 Forest Habitat
3.27 Views

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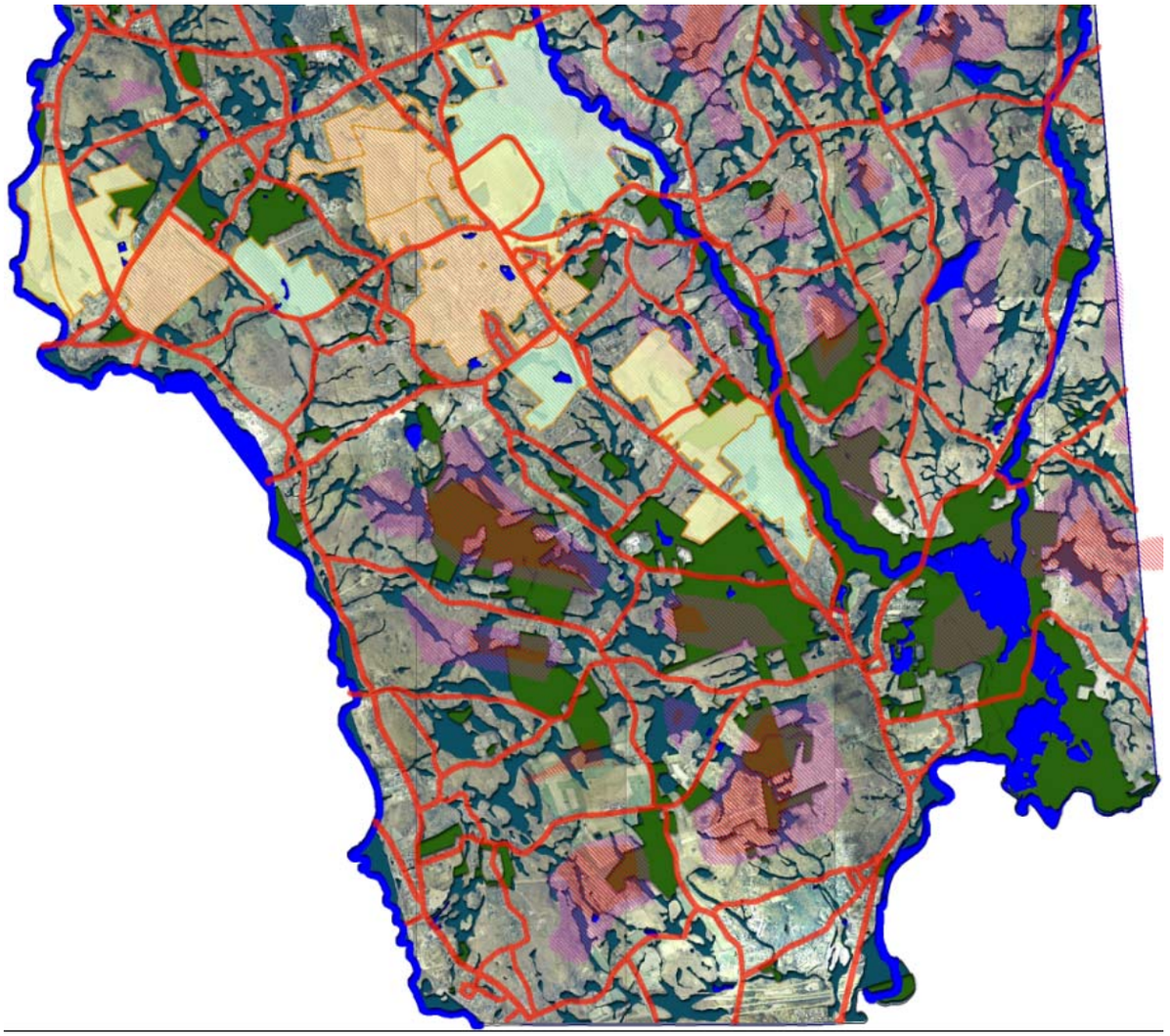
3.33 Open Space Fragmentation
3.35 Open Space (other issues)



Primary Sources:

Aerial Photograph/ inland wetlands/ open space and protected land/ Site specific information from Mansfield Town Planner/1993 Plan of Development

Aerial interpretation and interior forests by L.A.@ UConn

Base data from DEP

UConn land designation and configuration from University of Connecticut

The Question: How much interior forest habitat exists in town?

Answer: 6954+- acres

So what? *The northwest part of town has little interior forest. A significant amount of interior forest exists and is protected to the* ***east*** *of Route 195 and at Mansfield Hollow. In the northeast, the majority of the existing interior forest is not protected.*

Scenario assumptions:

1. Only the 14 significant forest tracts have been considered for interior habitat

2. Only forests with the following setbacks have been considered as interior forests:
arterial roads = 1,250'
collector roads = 1,250
local roads = 0'

The numbers:

Town Size:
29,175 acres

Number of tracts: 14

Average size: 496 acres

Largest: 829 acres

Note: For additional Source Info. See Pages A4,A13,A33,A36,A37,A50-64,

3.0 Analysis Phase:

Primary Resources:

3.3 Topography
3.5 Surficial Water
3.7 Surficial Geology/Soils
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3.11 Cultural
3.13 The "People"

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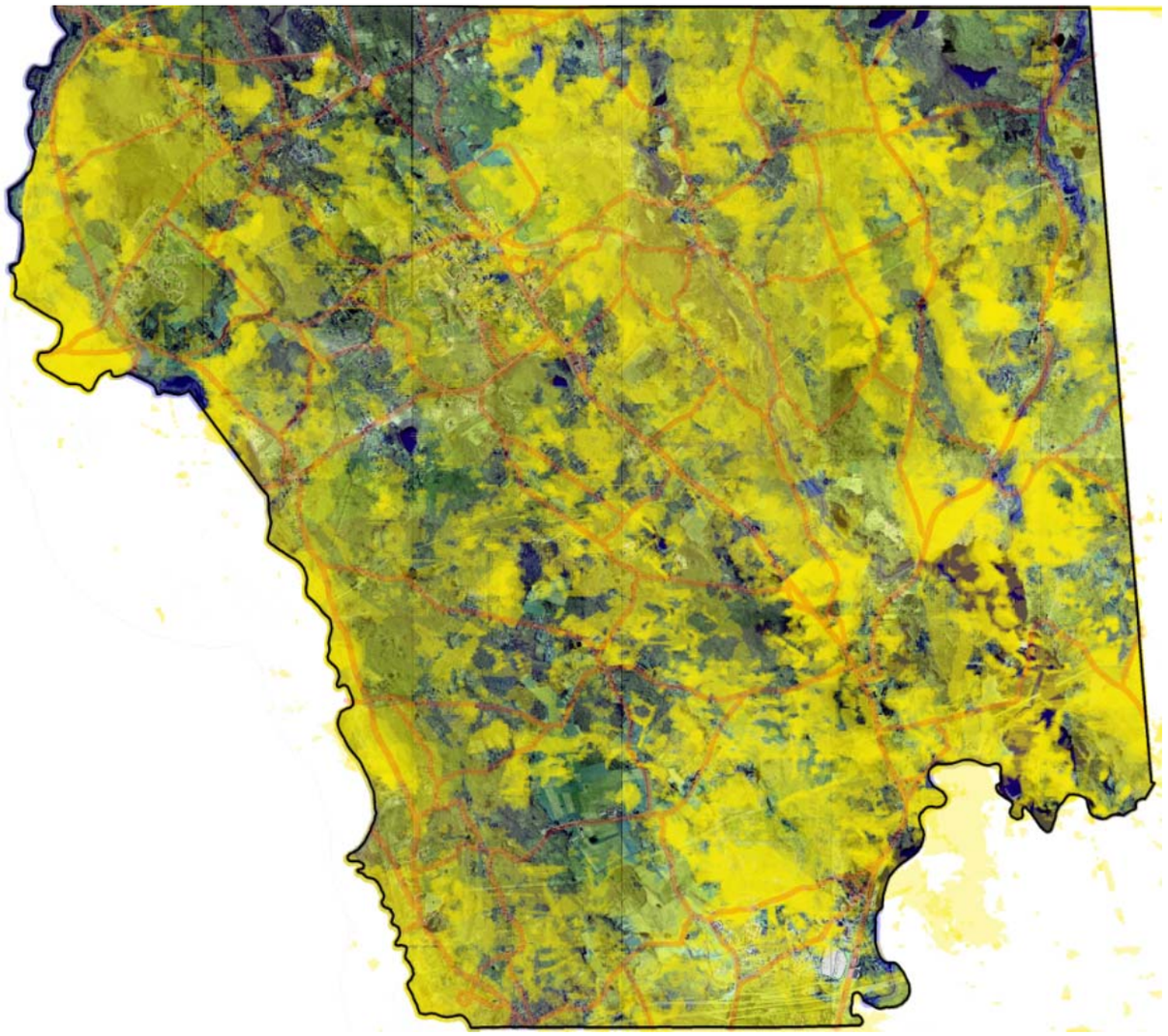

Roads/Aerial Photograph

Degree of Visibility: Very High

Degree of Visibility: High

Degree of Visibility: Moderate

Primary Sources:

Aerial Photograph/Site specific information from Mansfield Town Planner/1993 Plan of Development

Aerial interpretation and visibility analysis by L.A.@ UConn

Base data from DEP

Note: For additional Source Info. See Pages A4,A33

The Question: What parts of town are the most visible from the major roadways?

The answer: *Parts of the Willimantic river valley and the southern part of town in and around Mansfield Hollow and Mansfield Center.*

So what? *The Town of Mansfield identifies with its long standing rural and agricultural history. For this reason it is extremely important that the introduction of new development does not detract from this image. Currently Mansfield maintains its rural feel with expansive views across the Willimantic and Fenton River valleys and with a strong active agricultural presence. The concern is that new development will become more visible and detract from the towns agricultural heritage.*

Scenario assumptions:

1. Vegetation does not block views.

2. Visibility from primary and secondary roads will effectively identify the most visible areas in town.

3. The visible the area, the darker the yellow color.

3.0 Analysis Phase:

Primary Resources:

3.3 Topography
3.5 Surficial Water
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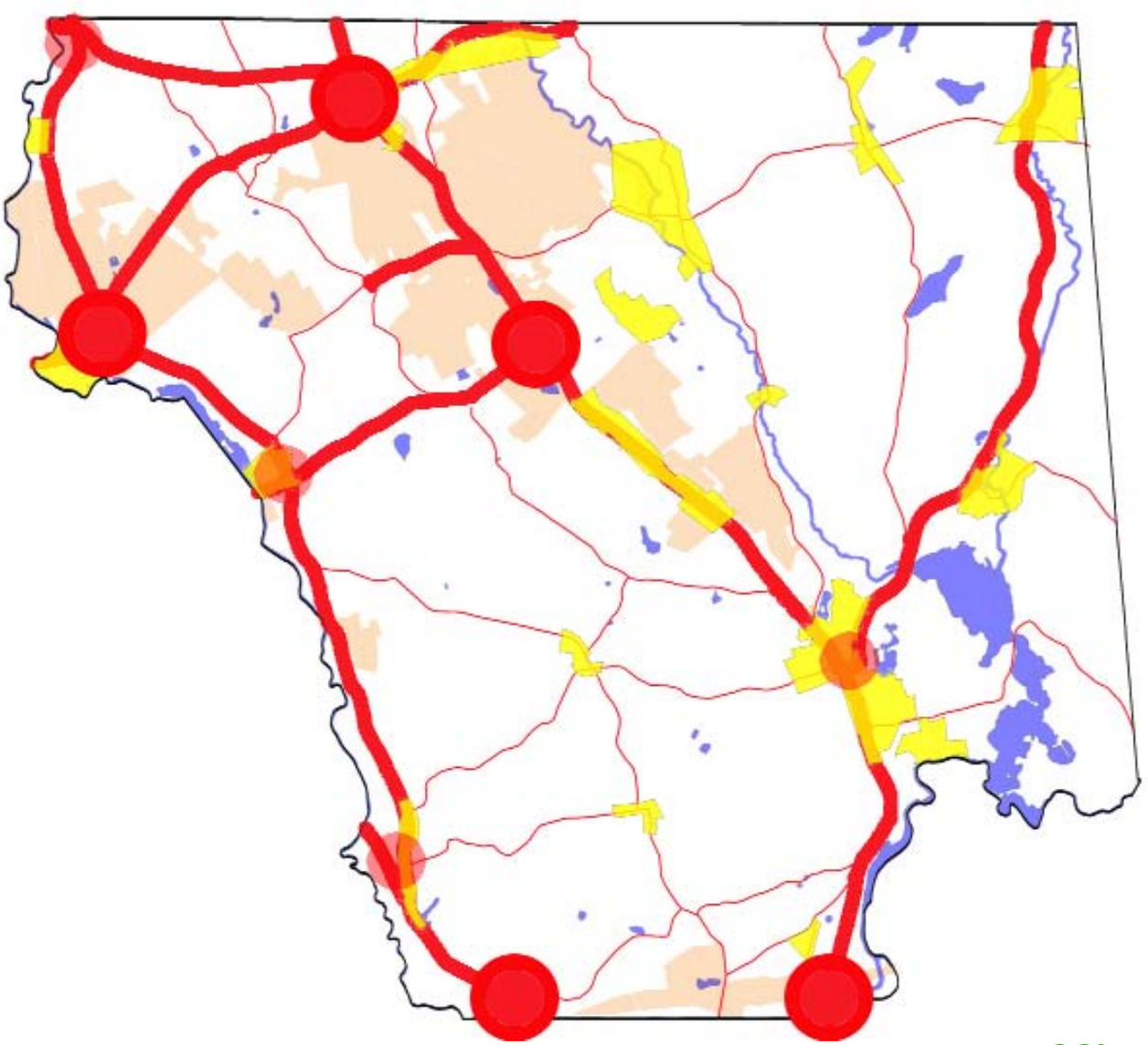


Primary Sources:

Aerial Photograph/Site specific information from Mansfield Town Planner/1993 Plan of Development

Aerial interpretation and yield potentials by L.A.@ UConn

Base data from DEP

UConn land designation and configuration from University of Connecticut

Note: For additional Source Info. See Pages A12,A24,A33,A36

P.M. Observation: Promote the return to the traditional development patterns of mixed use villages at major cross-roads.

Overview: *Traditional New England town development was based on mixed use villages adjacent to common open space with farmsteads surrounding the centers. The village centers were often Strategically located at important crossroad locations, offering travellers and residents alike, a place to eat, drink, purchase necessities and socialize. Mansfield has 18 such village centers/crossroads. Unfortunately, post WWII development deviated from this sensible development pattern and development became a decentralized sprawl across the landscape. The effect includes the need for a costly and inefficient road network, houses scattered about town with a limited sense of community and a reliance on the automobile, segregated land uses, consumption of natural resources and fragmentation of natural ecosystems.*

Question: *What criteria should be used to determine the best location for high density, mixed use development? The answer is explained by the following sequence of diagrams.*

Diagram 1: *Mixed use development requires safe, high volume roadways. Red circles highlight intersections of the state roads which could best accommodate higher volumes of automobile and truck traffic.*

Diagram 2: *Mixed use developments require municipal infrastructure such as sewer and water service. Intersections are prioritized based on proximity to existing sewer service.*

Diagram 3: *Proposed mixed use development should be viewed as "in-fill" to existing historic development. This diagram shows locations of existing villages, crossroads, and other historic structures.*

Summary of sequence:

Five locations at intersections of state roads are appropriate for higher density mixed use development assuming public services (sewer/water).

Three locations at intersections of state roads are appropriate for lower density mixed use development.

Diagram 1

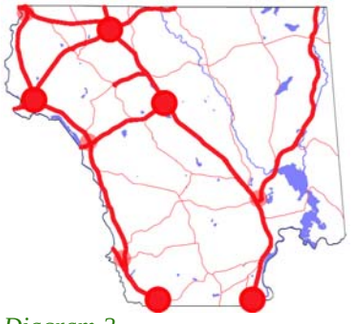


Diagram 2

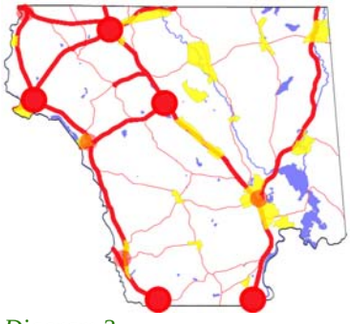
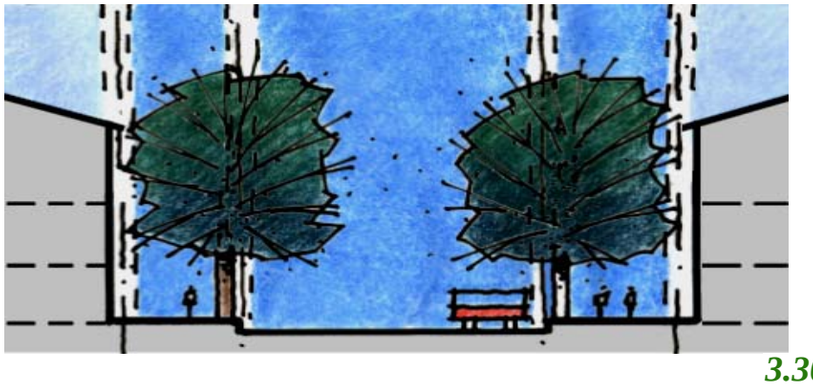


Diagram 3



3.0 Analysis Phase:

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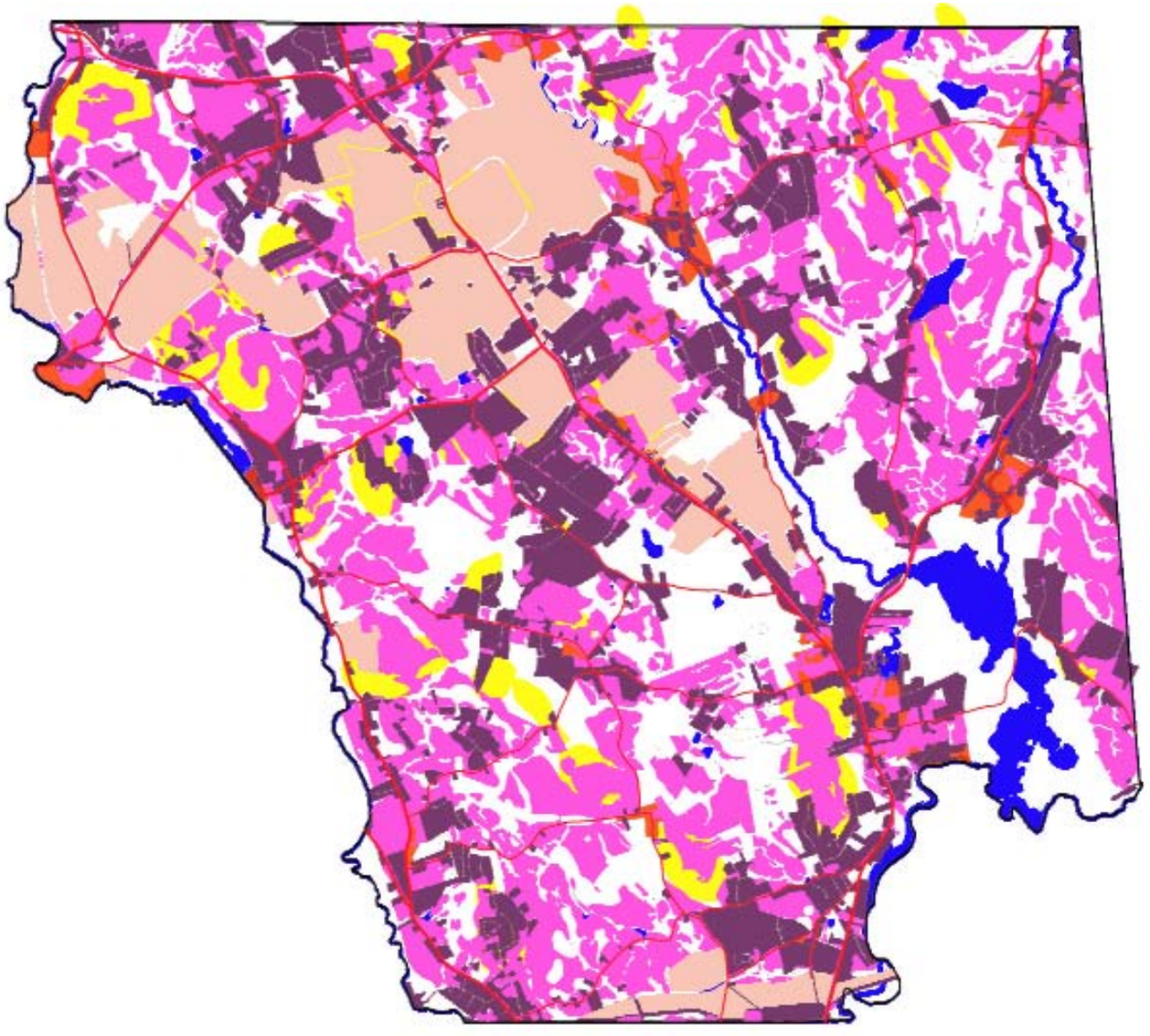
3.35 Open Space (other issues)



Primary Sources:

Aerial Photograph/Site specific information from Mansfield Town Planner/1993 Plan of Development

Aerial interpretation and yield potentials by L.A.@ UConn

Base data from DEP

UConn land designation and configuration from University of Connecticut

Note: For additional Source Info. See Pages A12,A24,A33,A36,A71,A72,A70

PM. Observation: Protect Drumlin tops from over development without reducing development potential for the land owner.

Overview: *In the Town of Mansfield, the land with the fewest limitations for development has already been developed. The land which will be developed in the future is land which is not ideal for development. Future land development will occur on drumlins and other hilltops. The reason the majority of drumlins have not been developed is due to economics. To this point, drumlins have not been developed because of the expense of development, not because of land use regulations. Whatever the reason, the scenic, semi-rural town character has been preserved primarily because highly visible drumlins have remained either as farm land or forest cover.*

Question: *What land planning techniques can be utilized to develop drumlins while preserving the scenic quality? The answer is explained by the following sequence of diagrams and sections.*

Diagram 1 *shows the relationship between drumlins and Mansfield's historic villages/crossroads. Out of 20 drumlins, only 5% are substantially developed and none have development at the top. Remember, the early settlers had to manage their resources and drumlins were just too difficult to develop for any landuse other than agriculture.*

Diagram 2 *shows the relationship between drumlins and Mansfield's existing residential developments*.(All parcels with a structure on it that cannot be further subdivided based on zoning regulations and physical site limitations) Of the 20 drumlins, only 15% are substantially developed and only 15% have development at the top. So, still today, we have found the development of drumlins to be too resource intensive to justify economically.*

Diagram 3 *shows the majority of drumlins are legally and functionally able to be developed. Out of 20 drumlins, 50% could substantially be developed and 50% could be developed at their high points.*

Summary of sequence: *When drumlins are cleared, there are dramatic views to and from the cleared land. "Horsebarn Hill" is a perfect example of the prominence of a drumlin. What would "Horse Barn Hill" look like if it was covered with single family houses? That is the fate of many of the drumlins(non-UConn lands) in Mansfield if current regulations are not changed.*

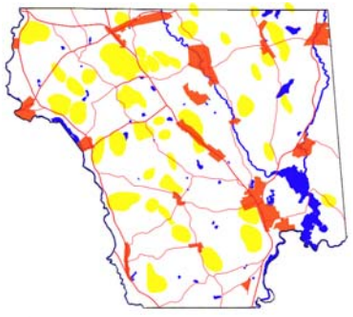


Diagram 1

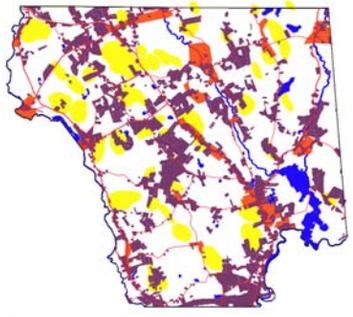


Diagram 2

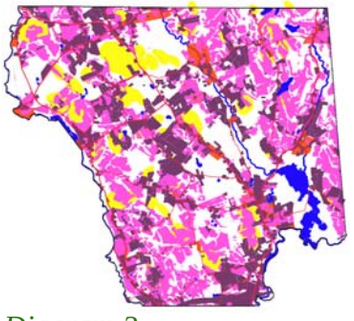
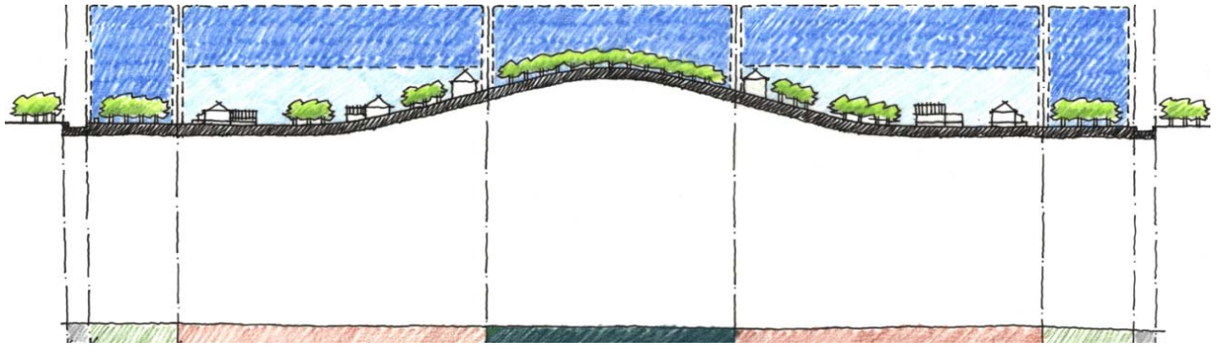


Diagram 3



3.0 Analysis Phase:

Primary Resources:

3.3 Topography
3.5 Surficial Water
3.7 Surficial Geology/Soils
3.9 Flora/Fauna
3.11 Cultural
3.13 The "People"

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3.27 Views

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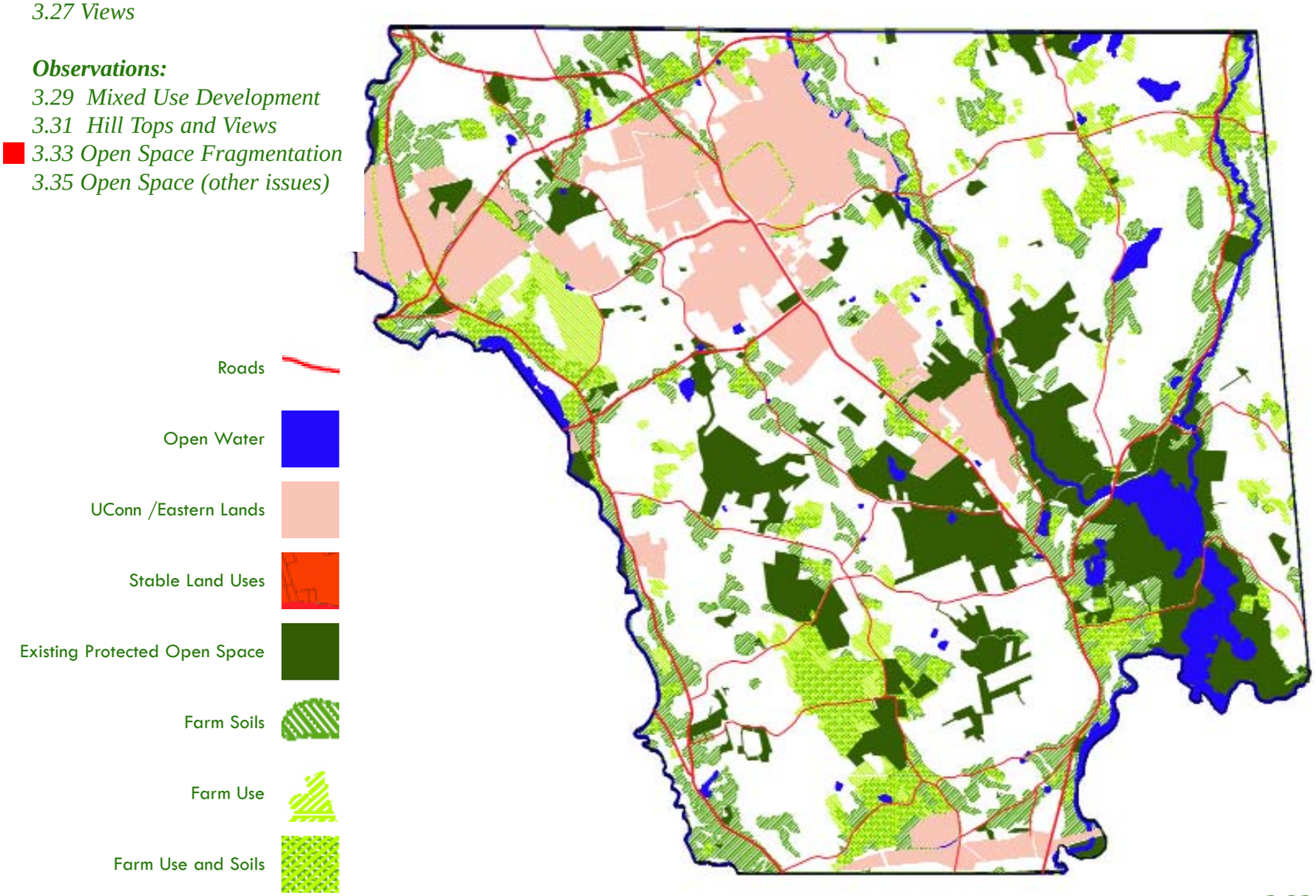
3.31 Hill Tops and Views
3.33 Open Space Fragmentation
3.35 Open Space (other issues)



Primary Sources:

Aerial Photograph/Site specific information from Mansfield Town Planner/1993 Plan of Development

Aerial interpretation and yield potentials by L.A.@ UConn

Base data from DEP

UConn land designation and configuration from University of Connecticut

Note: For additional Source Info. See Pages A12,A33,A36,A37,A17,A18,A71

PM. Observation: Reduce fragmentation of existing protected open space by connecting the existing open space with additional lands to create a contiguous network of lands for the benefit of natural ecosystems and human habitation.

Overview: *The majority of protected open space is located at or adjacent to the Mansfield Hollow area. The town nd state have done an admirable job in protecting existing resources in this area. It is difficult to understand what lands controlled by UConn will remain in their current state due to the much needed expansion made possible by Uconn 2000 and UConn 21st Century. It is important that the Town of Mansfield and UConn have a coordinated open space plan. Natural systems and wildlife do not understand political boundaries.Proactive planning does not limit the development potential of land, rather, sound, long -range planning maximizes development potential while protecting existing resources.*

Question: *What is the most efficient and effective method to create a contiguous open space network?*

Diagram 1 *shows existing protected open space. There are 4,454 acres or 15% of the town. as open space.The Mansfield Hollow area accounts for 5.8% of the Town and 38% of the total open space.*

Diagram 2 *shows farm land soils and farm uses. Farm soils and farm uses account for 8,382 acres or 29% of Mansfield land. See Appendix. for patterns of other land uses and natural features.*

Diagram 3 *shows stable land uses that will probably remain in their existing state or increase in intensity. These areas, due to their functional characteristics, can not be considered as part of an open space network.*

Diagram 4 *shows how farm soils and farm uses connect much of the existing protected open space into a unified network.*

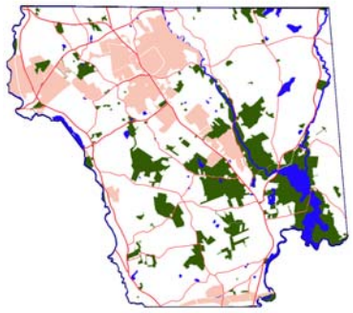


Diagram 1

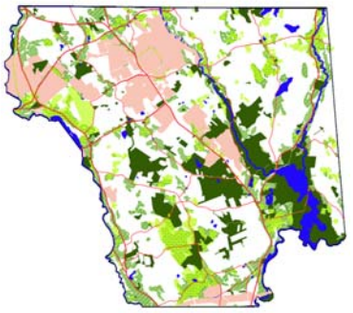


Diagram 2

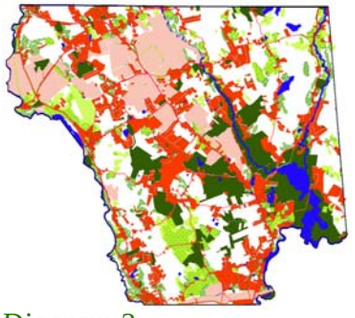


Diagram 3

Summary of sequence: *The protection of existing farm soils/use in conjunction with existing protected lands will provide open space networks along all three major rivers and significantly provide connectivity among much of the remaining areas. There are still some areas which will need lands not categorized as farm soils/use protected to create a functional open space town-wide network.*

3.0 Analysis Phase:

Primary Resources:
3.3 Topography
3.5 Surficial Water
3.7 Surficial Geology/Soils
3.9 Flora/Fauna
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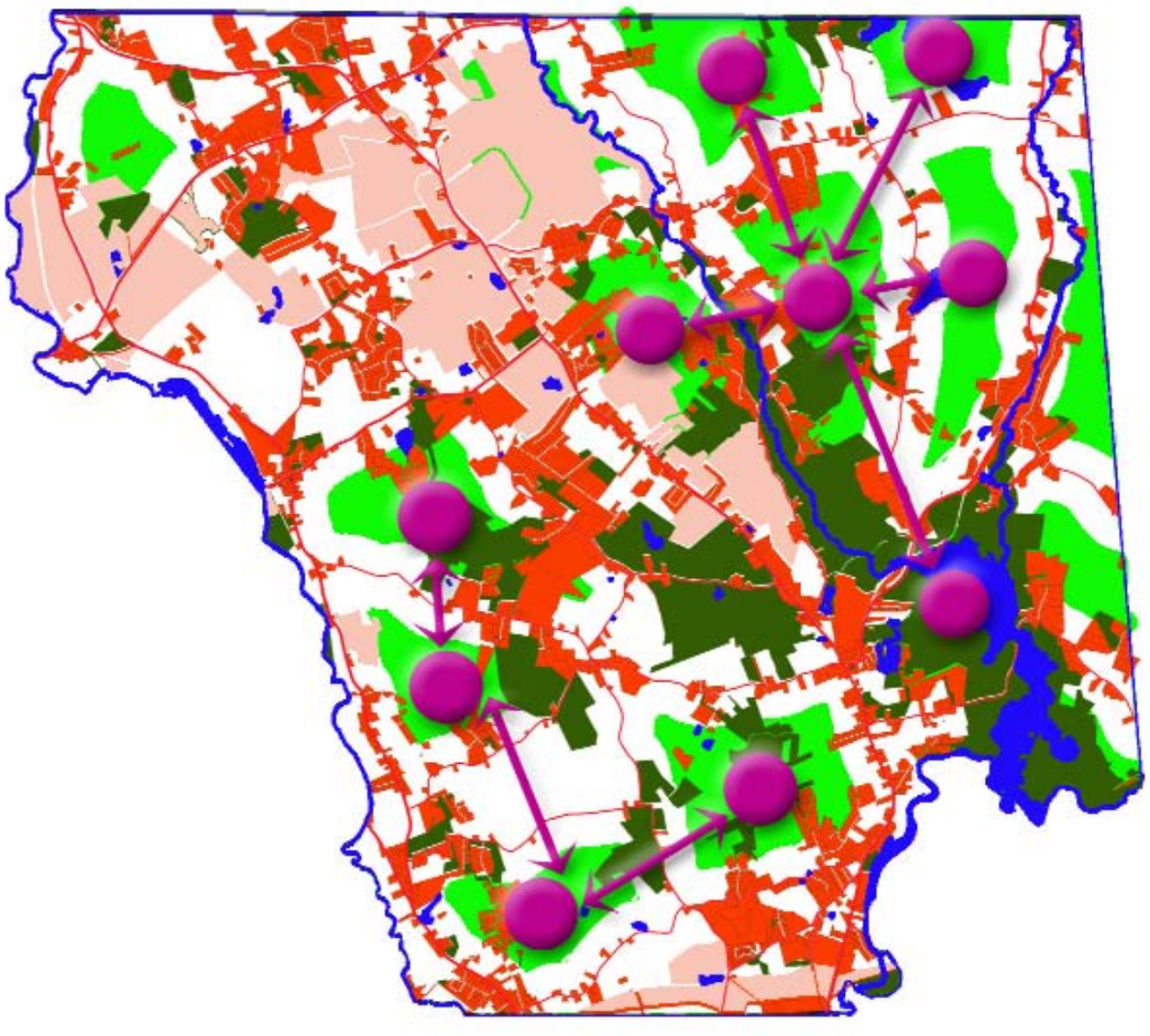

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Base data from DEP

UConn land designation and configuration from University of Connecticut

Note: For additional Source Info. See Pages A12,A33,A36,A37,A50-64,A71

PM Observation: It is also important to protect 2 or 3 large areas of open space.

Overview: *The ecologist Richard T.T. Forman believes that towns (regions) in New England should take special care to protect large tracts.*

Question: *Where should these large tracts of open space occur?*

Diagram 1:
Shows existing protected open space in dark green. There is 4,268 acres or 14% of the town. as open space.

Diagram 2:
Diagram 2 shows interior forest in relationship to existing protected open space

Diagram 3:
Shows the areas of development.

Summary of sequence:
There is no simple way to connect or protect interior forest. Increased use of the automobile (more sustained noises from roadways) will continue to reduce the size of breeding habitat for certain species. Protection of farm soil/use will act as a "hub" in the connectivity of significant forest lands.

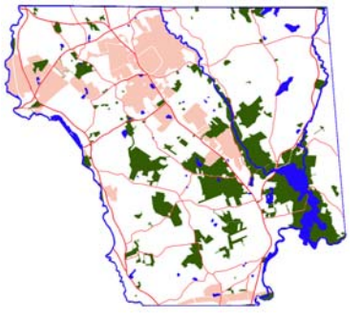


Diagram 1

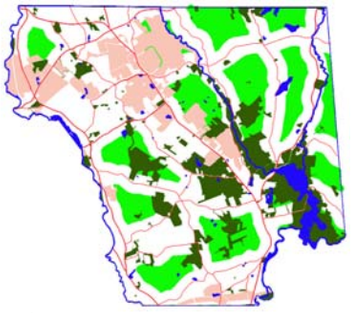


Diagram 2

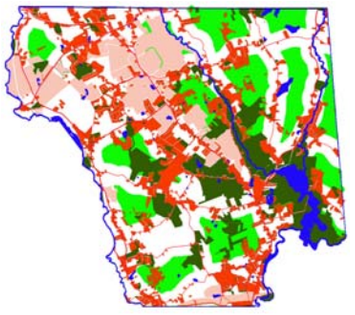
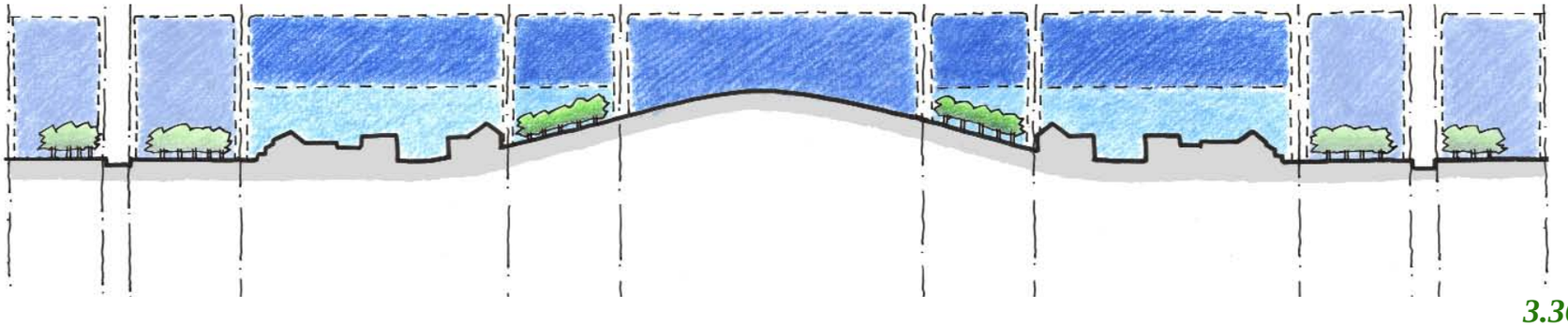
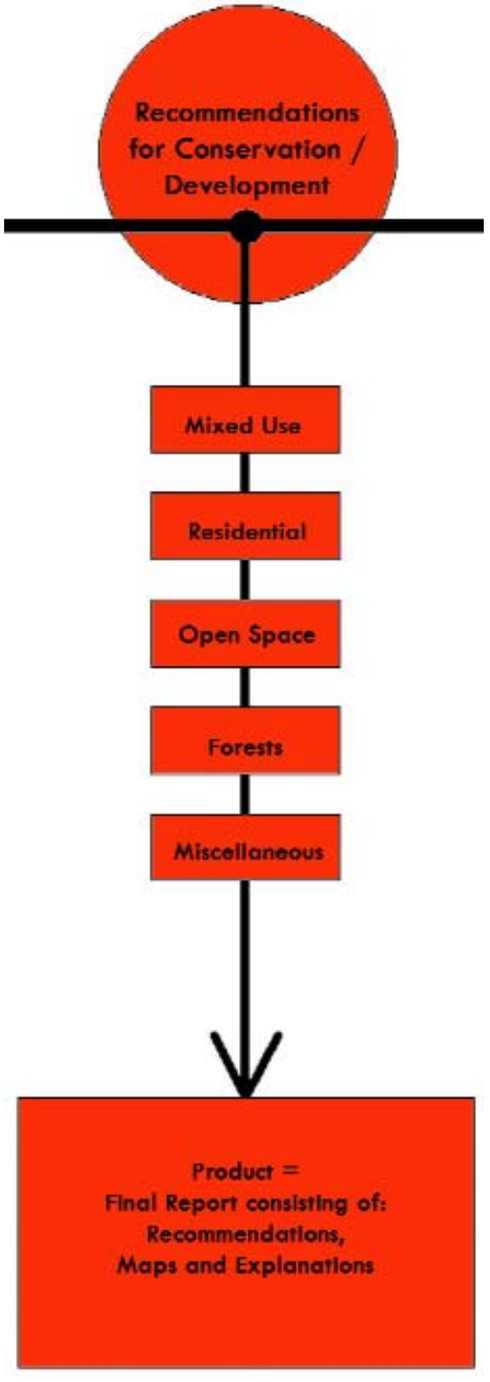


Diagram 3



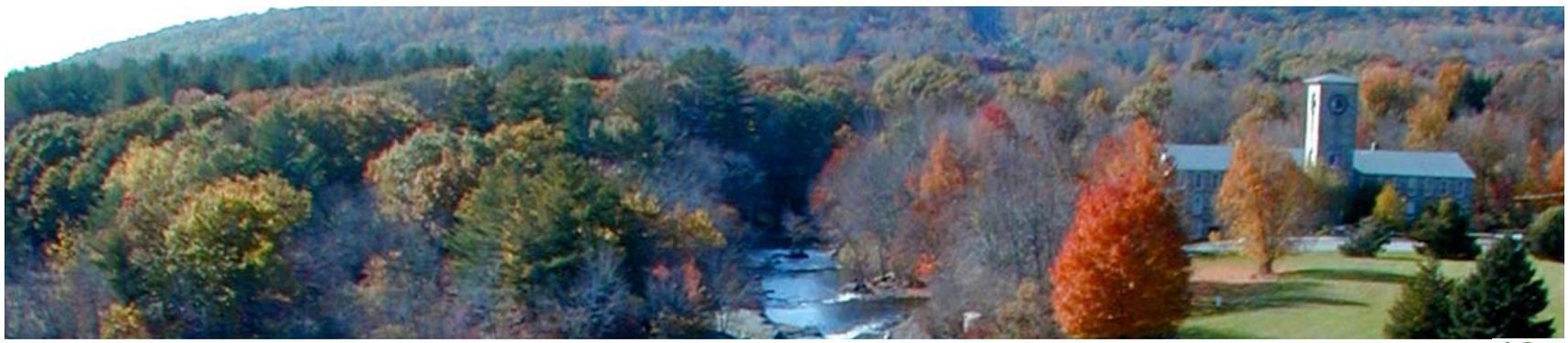
Recommendations Phase:
This phase consists of two equally important parts. The first part is the statement of principles for directing future conservation and development. The principles are specific to Mansfield's unique combination of programmatic needs and town characteristics. The second part of this phase is to apply the principles to the town's physical features to determine what the town would "look like" if the recommended principles are followed.

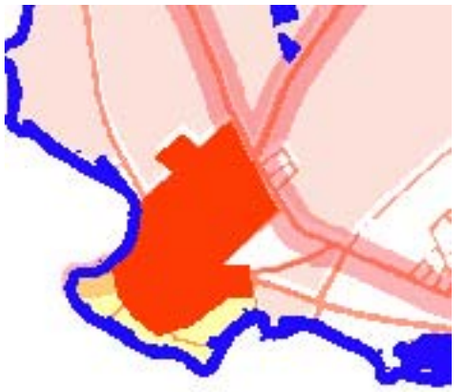
This study recommends "10 Principles for Sensible Growth" organized into five categories. The categories are: (1) Mixed Use Development; (2) Residential Development; (3) Open Space Design; (4) Forest Management and (5)Town Character Management.



A great democracy has got to be progressive or it will soon cease to be great or a democracy.

Theodore Roosevelt



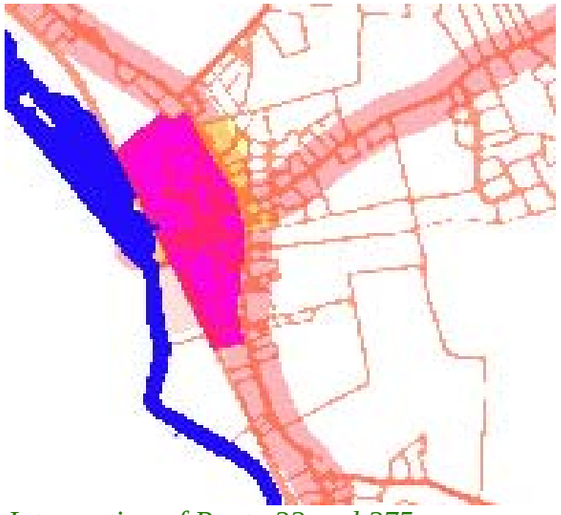


Intersection of Route 32and 44

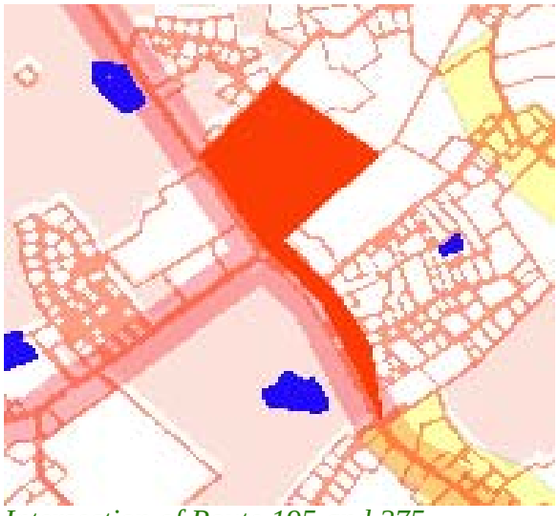
Intersection of Route 195 and 44

Mixed Use Developments:
Principle 1: Promote Mixed-Use Development in appropriate areas with densities higher than are now allowed.

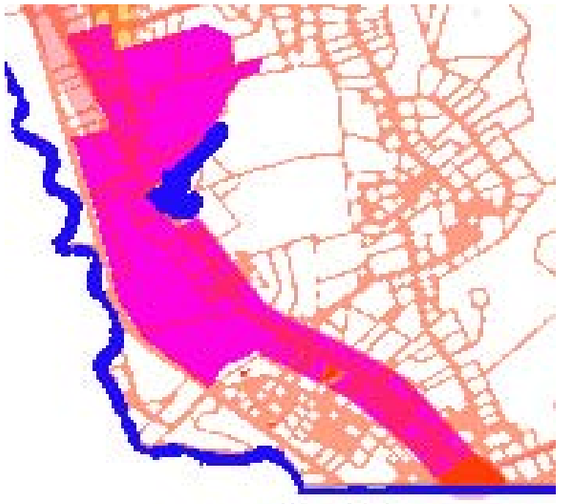
Principle 2: Seek opportunities to increase municipal sewer and water service to appropriate areas.



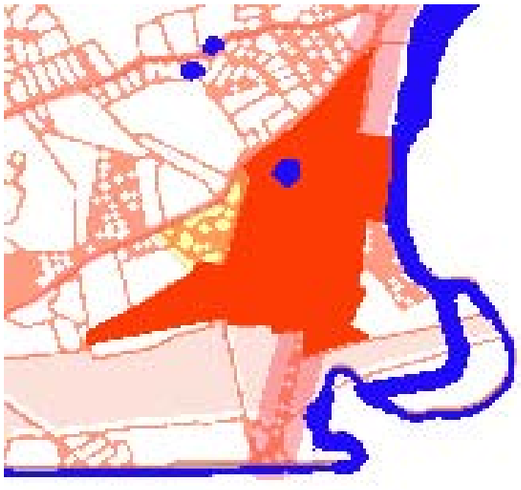
Intersection of Route 32 and 275



Intersection of Route 195 and 275

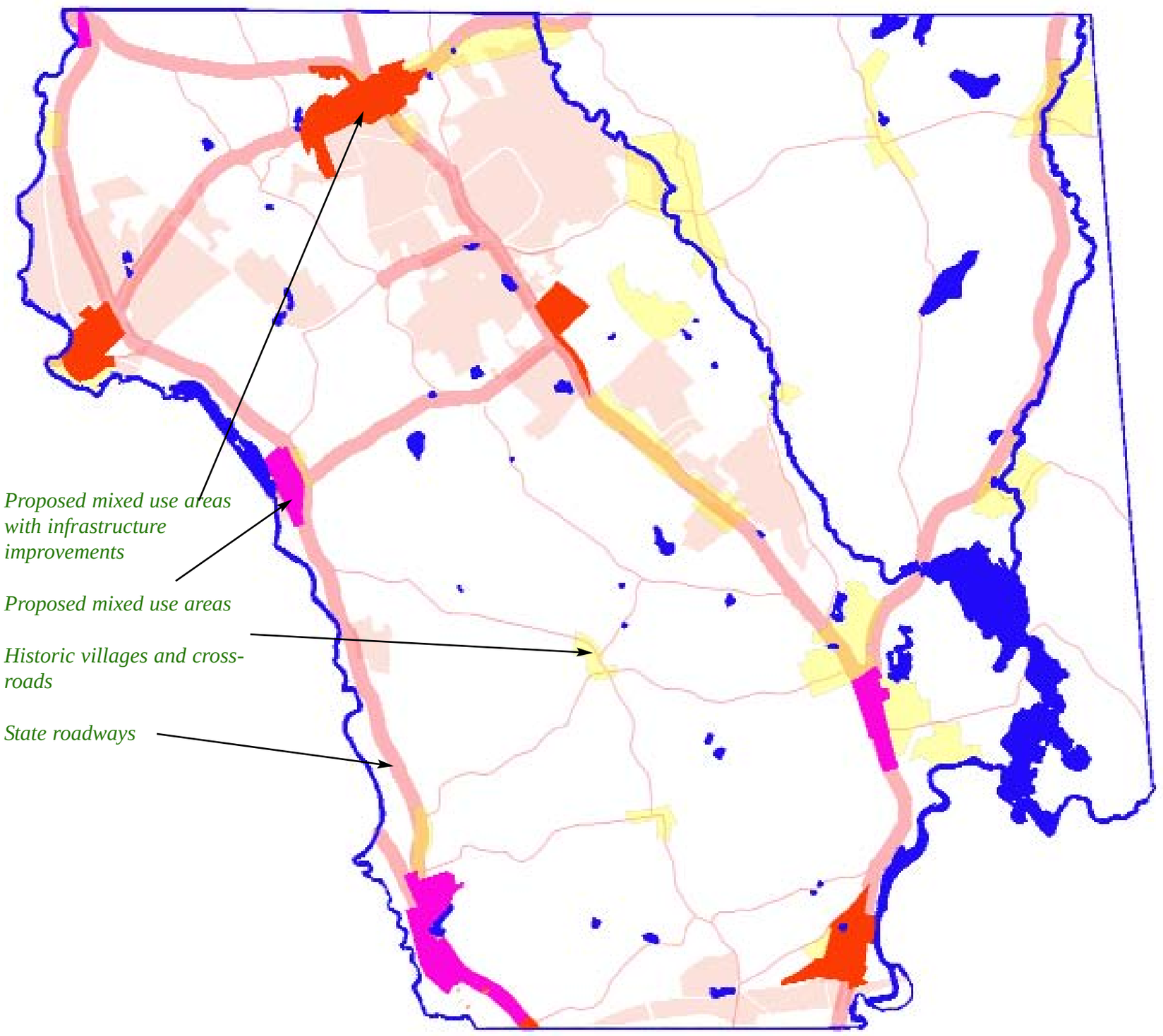


Intersection of Route 32 and 6



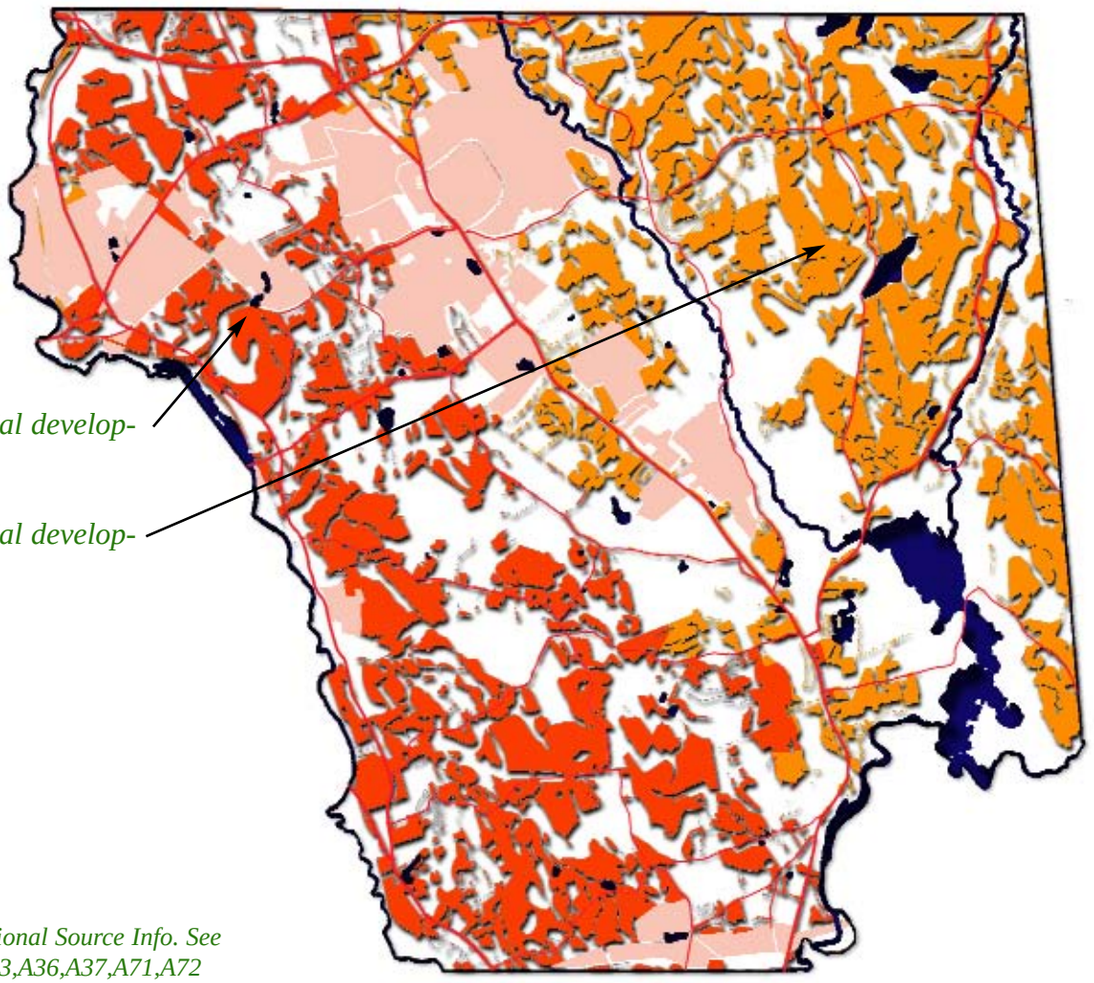
Intersection of Route 195 and 6

Proposed Locations of Mixed Use Villages



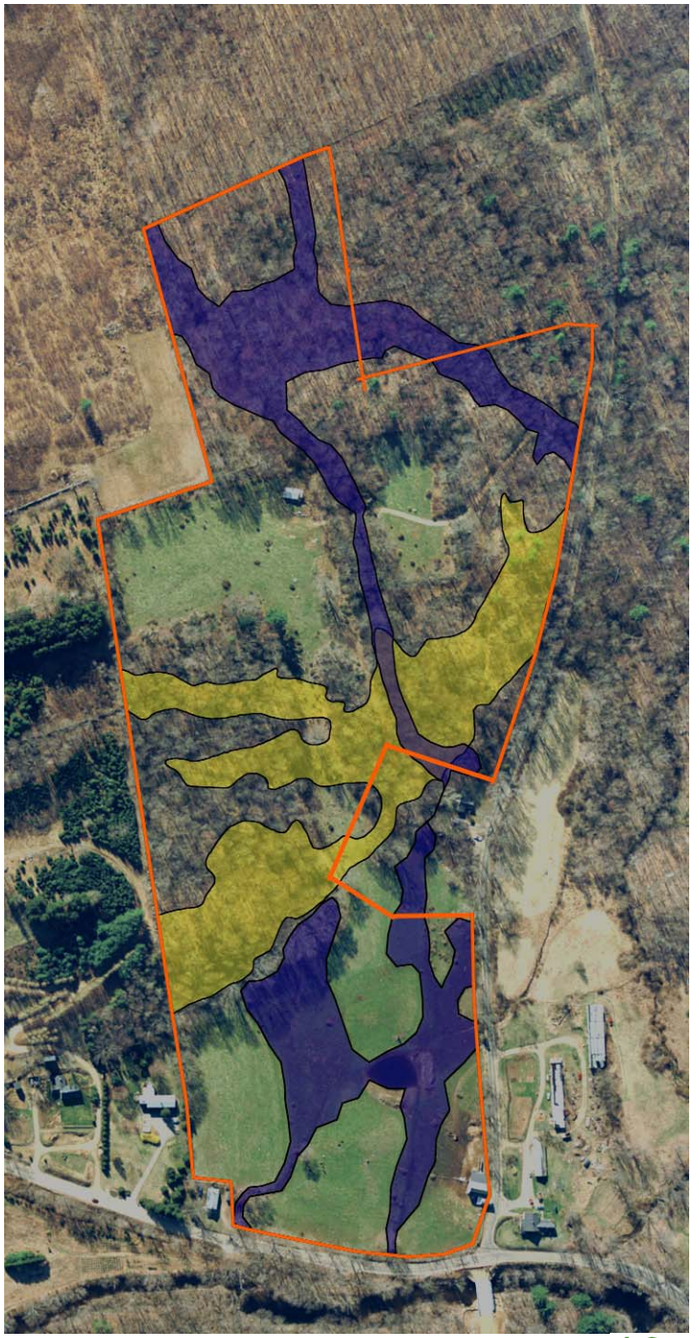
Residential Development:
Principle 3: Continue to craft planning and zoning regulations to encourage "cluster development".

Principle 4: Provide leadership at the state level to spearhead an effort to affect legislation in a way that would promote the use of community systems for water supply and sewage waste systems.



Note: For additional Source Info. See Pages A12,A33,A36,A37,A71,A72

Case Study of 2 Acre
Residential Development



Residential Development:
Principle 3: Continue to craft planning and zoning regulations to encourage "cluster development".

Principle 4: Provide leadership at the state level to spearhead an effort to affect legislation in a way that would promote the use of community systems for water supply and sewage waste systems.

Yield Plan:
A yield plan is used to determine how many residential lots can be placed on a piece of land without significant deterioration of its natural processes and resources. This number is determined by following town ordinances. For this example the following is assumed: 2 acre zoning; each lot must have a minimum of 200' road frontage; Development Area Envelopes must be a minimum of 30,000 square feet buildable land; A minimum of 15% open space. Based on the above guidelines it is determined that this parcel of land can support 6 new building lots shown below. This layout is quite invasive requiring five wetland crossings, and a significant amount of grading, and clearing.

Layout following existing town regulations:
Once the yield number has been established the town allows for some design flexibility. In this case each lot does not require road frontage. This allows each lot to be of a more uniform shape and also allows for better siting of each house site reducing the negative impact on the site. Here we utilize two shared driveways for 5 lots reducing the amount of disruption needed along the road edge while reducing curb cuts for added safety.

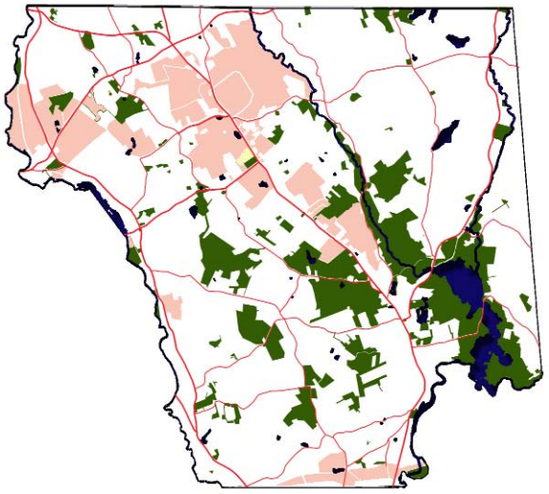
Proposed cluster development layout:
By implementing even more flexible design guidelines a significantly larger percentage of the development parcel can be used as permanent open space. Here we are using a "country lane" in place of a driveway. The country lane is more substantial than a driveway but still smaller than a local town road. This will create only one curb cut along the main road. The clustered building lots take advantage of prime soils for septic systems which will also be used as common open space. Here each lot is significantly smaller than current town regulations allow, but with good design this would not be a problem.

Parcel background:
This parcel of land is approximately 44.6 acres, all of which is currently zoned 2 acre . It is an almost equal mix of deciduous forest and open field located in a rural area with a strong agricultural history. There are potentially excellent views east across the Mount Hope River Valley, with close access to arterial roads. The site contains an extensive wetlands system equalling 11.3 acres or 25% of the whole parcel. The site also contains a large section of steep slopes greater than 20% which the town currently does not allow development on, equalling 11.9 acres or 27% of the whole site. Together wetlands and steep slopes render 21 acres or roughly 50% of the parcel unbuildable. Because of the amount of unbuildable land on this site it is beneficial to increase densities in areas that are ideal for development and permanently designate the unbuildable areas as open space. This creates a much more cohesive open space system retaining the existing rural agricultural feel which is of increasing importance to the towns residents in response to concerns of urban sprawl.

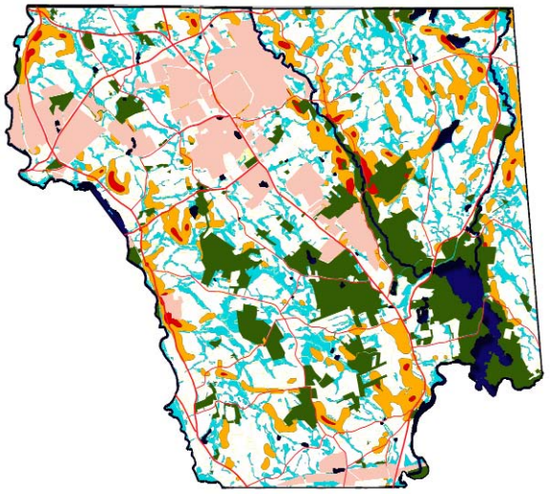
Open Space Design:

Principle 5:Create contiguous open space systems by using farm use/farm soil lands as "in-fill" to existing protected lands

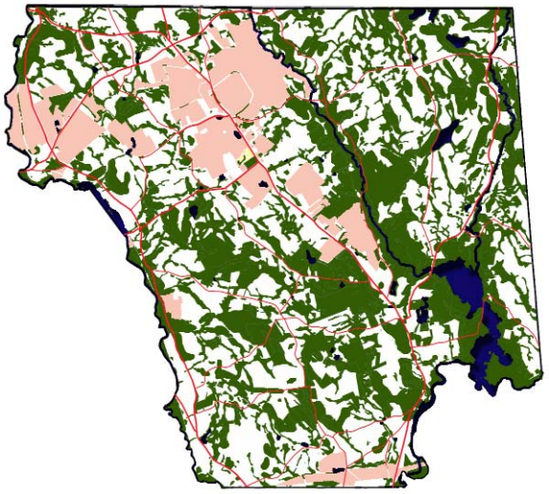
Principle 6: Increase recre-ational opportunities within the open space systems.



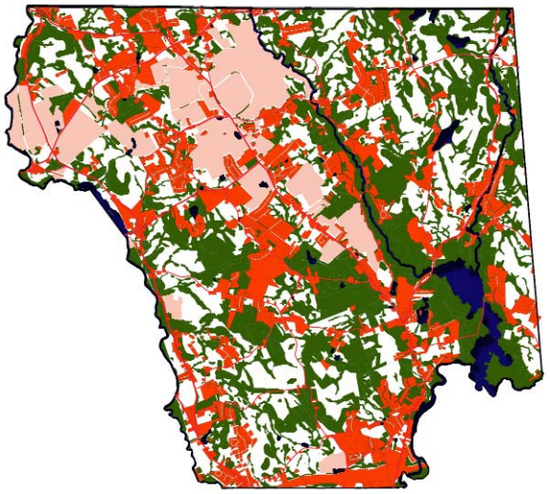
Map 1: Existing protected open space



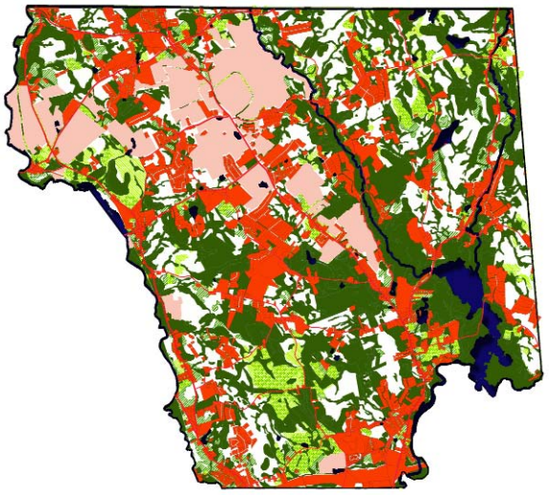
Map 2: Lands of steep slopes and wetlands which can not be developed.



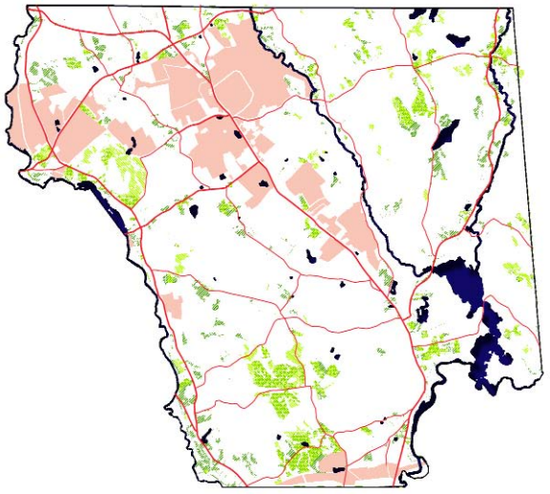
Map 3: Undevelopable lands and existing open space as "green"



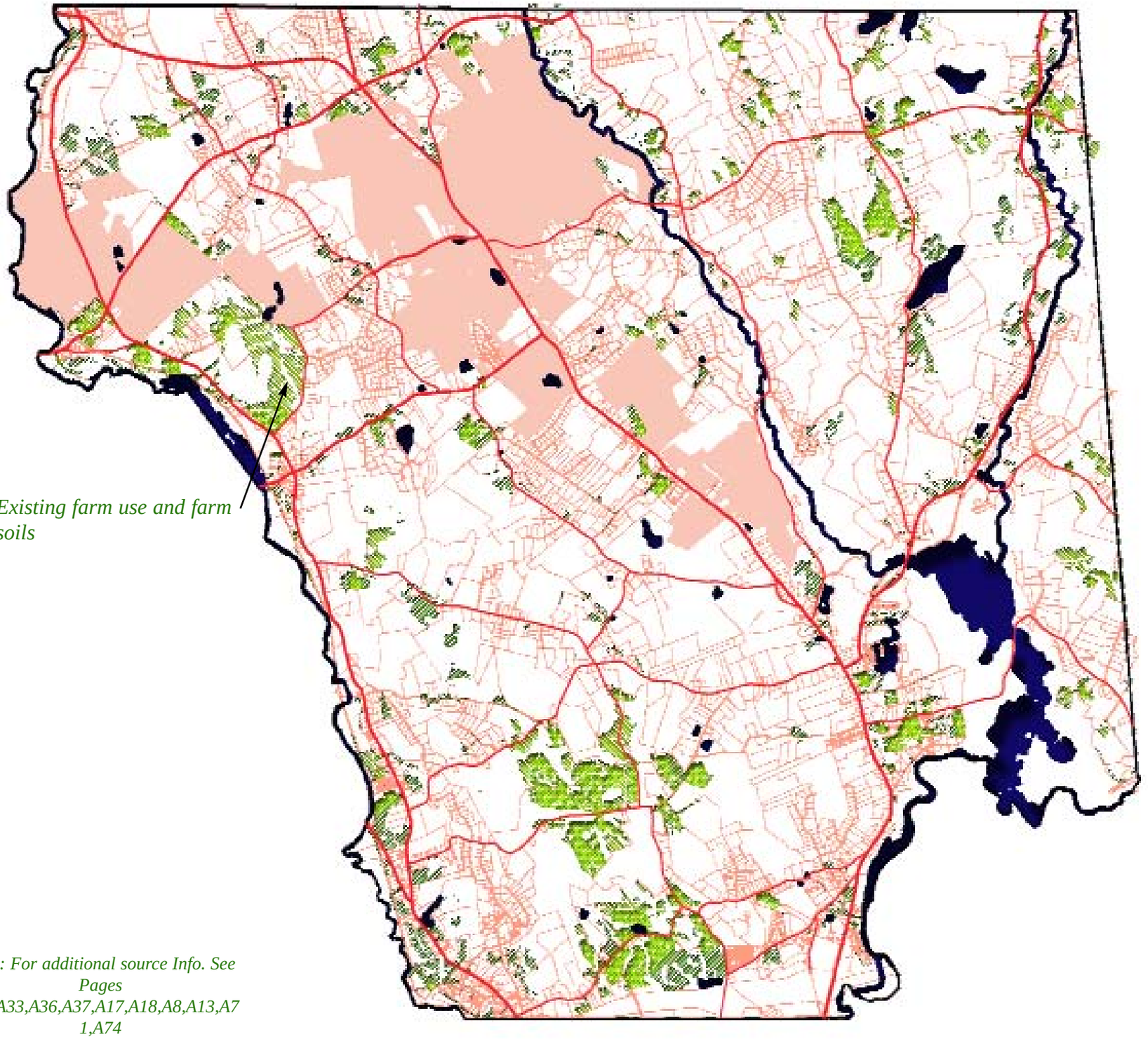
Map 4: Existing development



Map 5: Existing farm use and farm soils



Map 6: Farm use and farm soils which can be developed

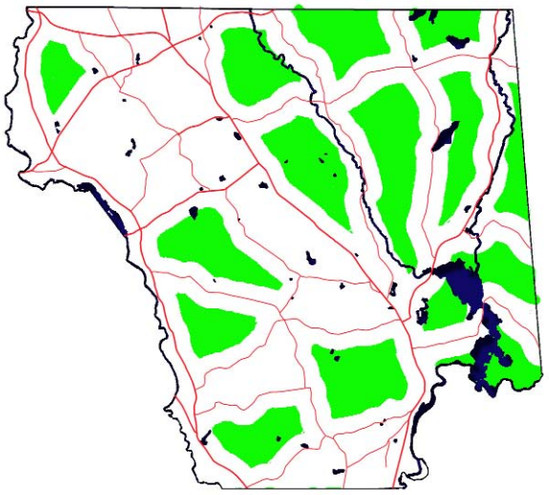


Existing farm use and farm soils

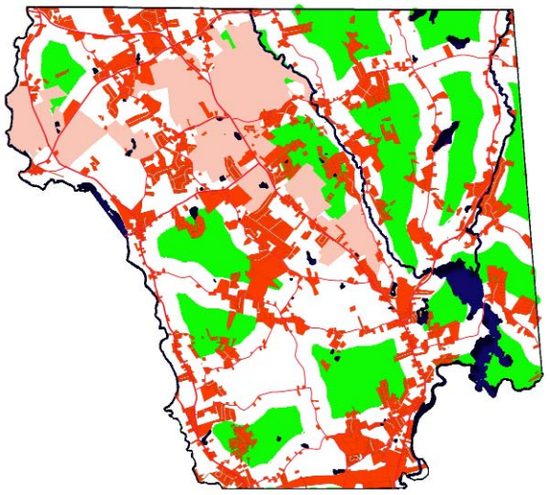
Note: For additional source Info. See Pages A12,A33,A36,A37,A17,A18,A8,A13,A71,A74

Forest Management:
Principle 7:Create two or three large tracts of protected open space with a maximize of interior habitat forest.

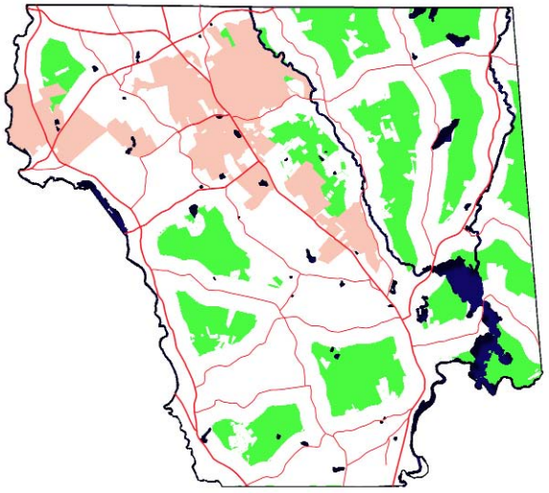
Principle 8: Minimize the number and intensity of roadways bisecting existing interior forest habitat.



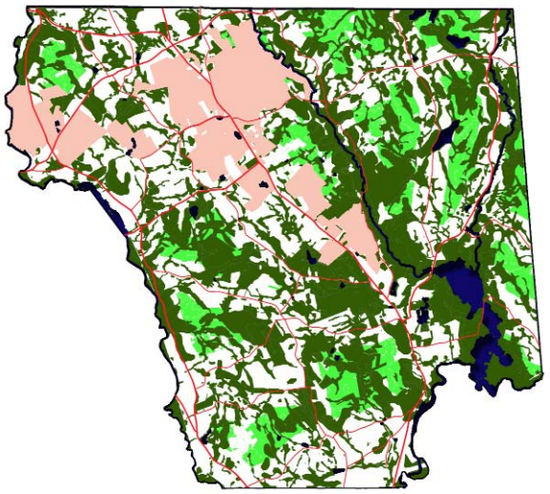
Map 1: Interior forest habitat



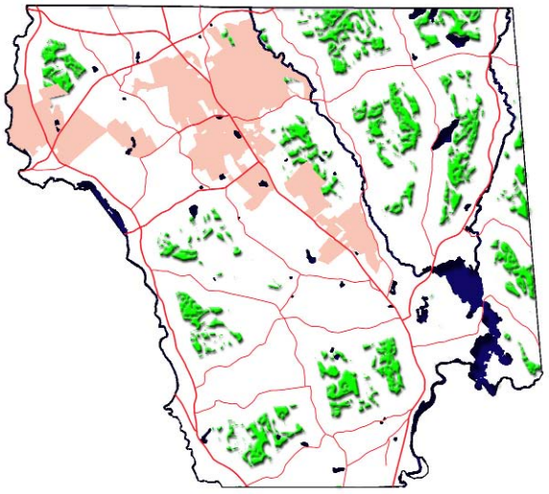
Map 2: Existing development



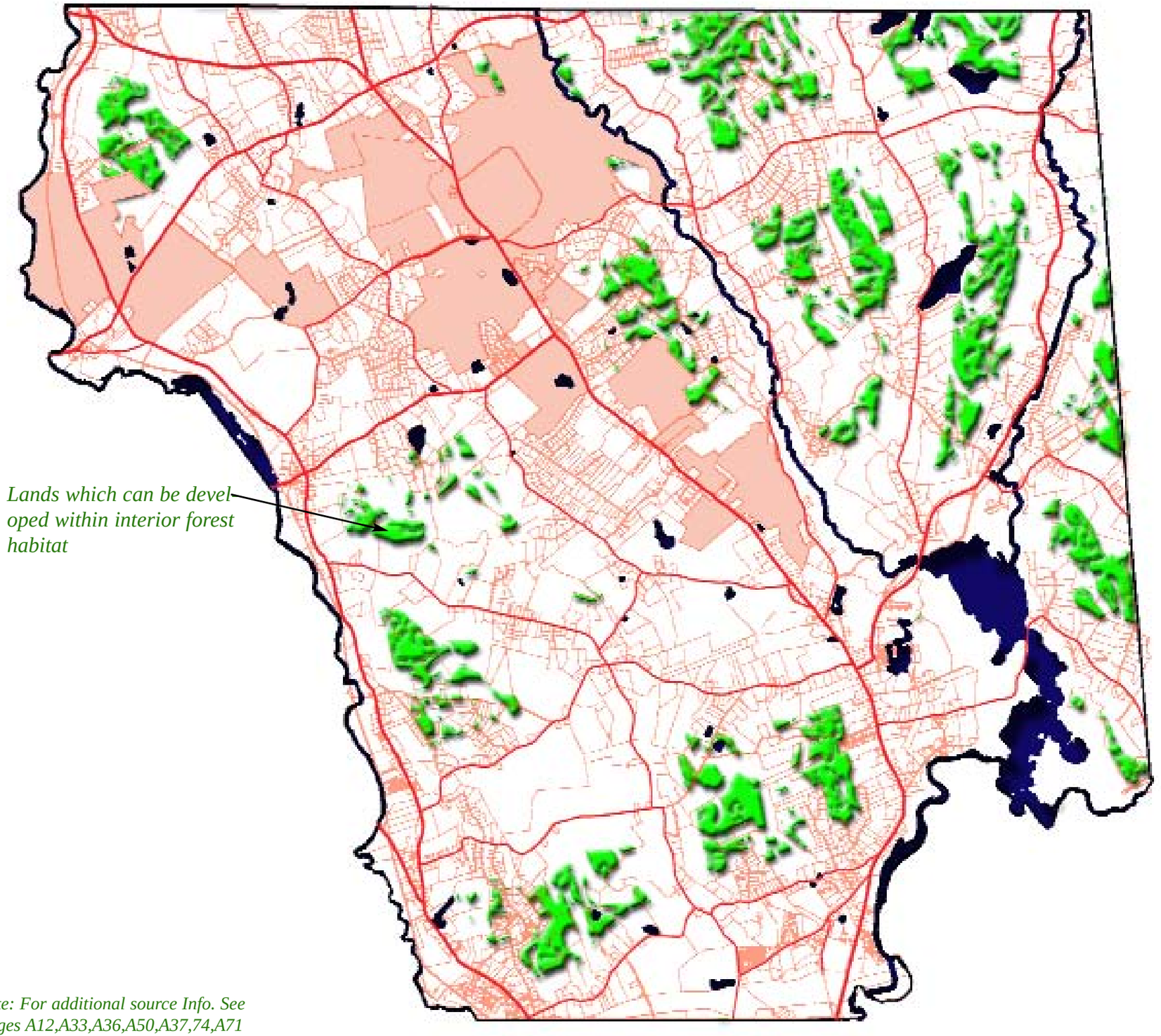
Map 3: Interior habitat remaining



Map 4: Protected open space and undevelopable lands



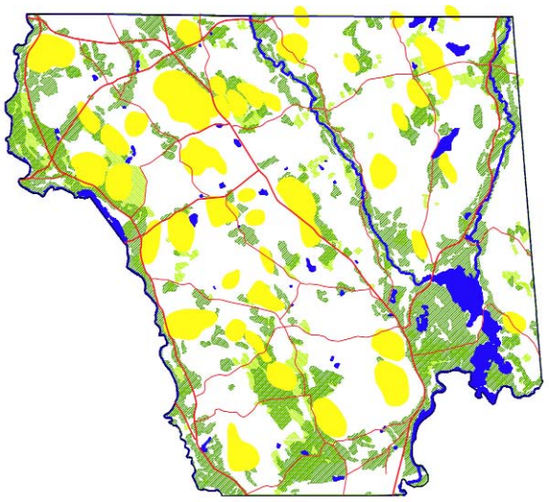
Map 5: Interior habitat which could be developed



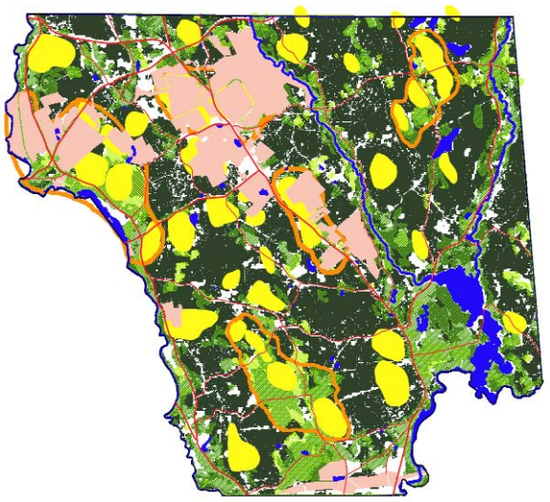
Note: For additional source Info. See Pages A12,A33,A36,A50,A37,74,A71

Town Character Management:
Principle 9:Protect and manage development on hilltops.

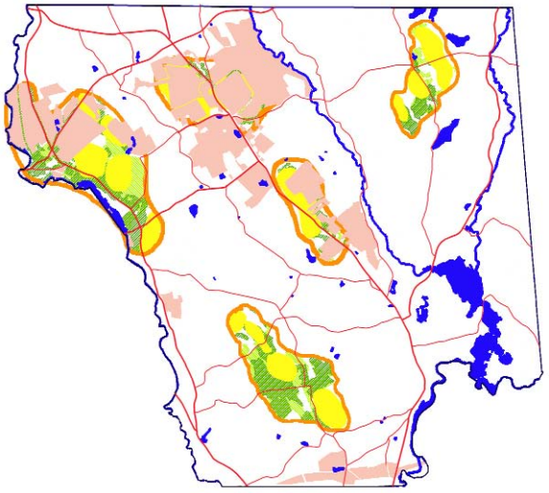
Principle 10:Protect and manage areas adjacent to roadways and other public areas.



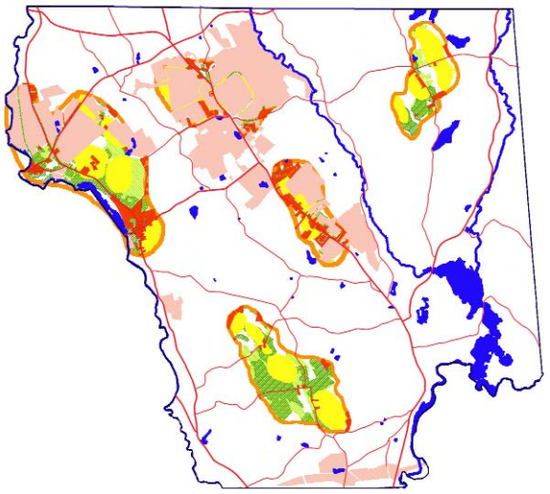
Map 1: Areas of thick till (hills), farm use and farm soils



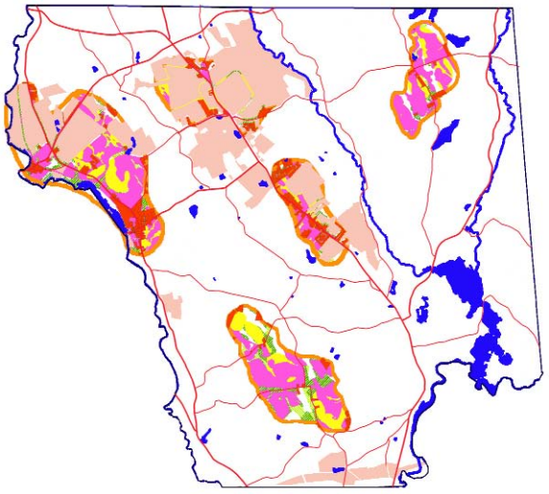
Map 2: Cleared areas with numerous hills and farm use/soils



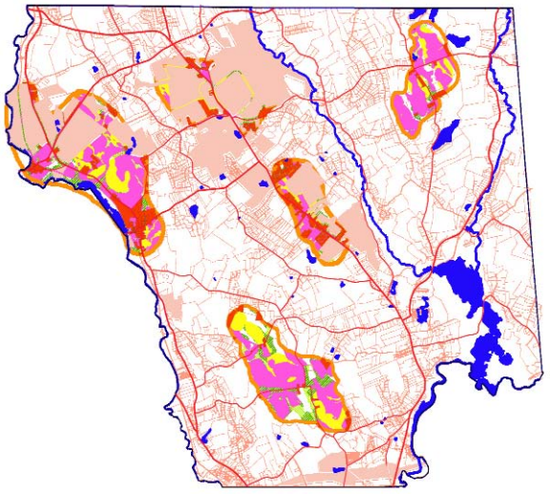
Map 3: Identification of the four hilltop areas with farm use/soils



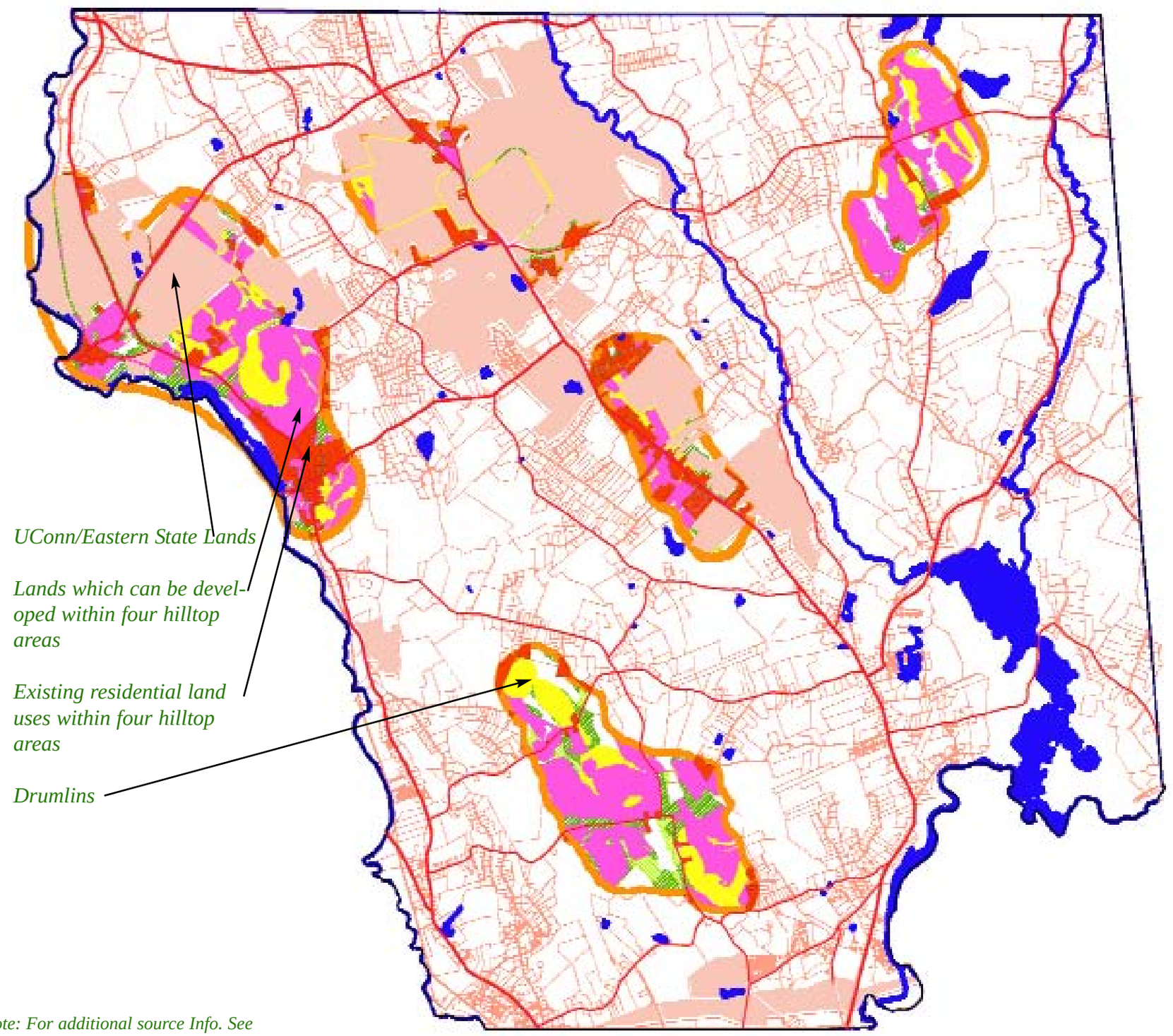
Map 4: Existing residential land uses within the four areas



Map 5: Lands within the four areas which can be developed



Map 6: Four Hilltop areas with parcel information



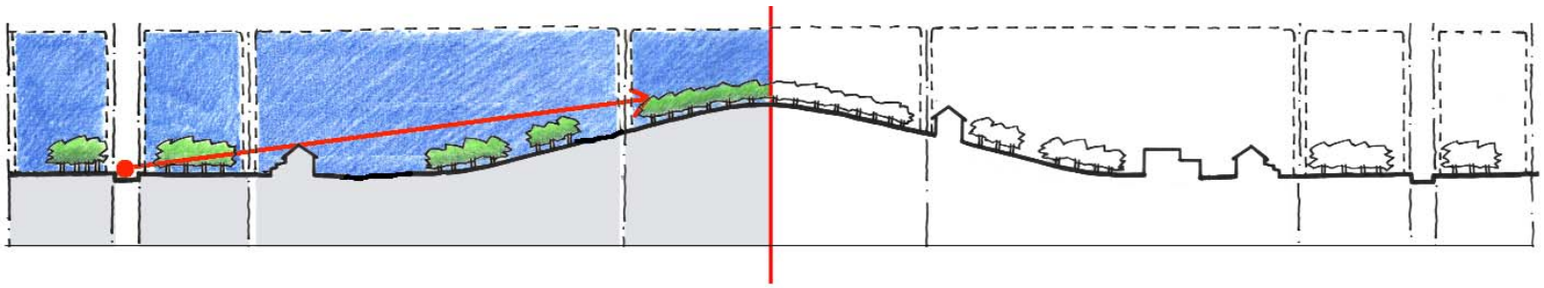
Note: For additional source Info. See Pages A12,A33,A17,A18,A36,A74

4.3 Mixed Use Developments
4.5 Residential Development
4.9 Open Space Design
4.11 Forest Management
4.13 Town Character Management

Town Character Management:
Principle 9:Protect and manage development on hilltops.

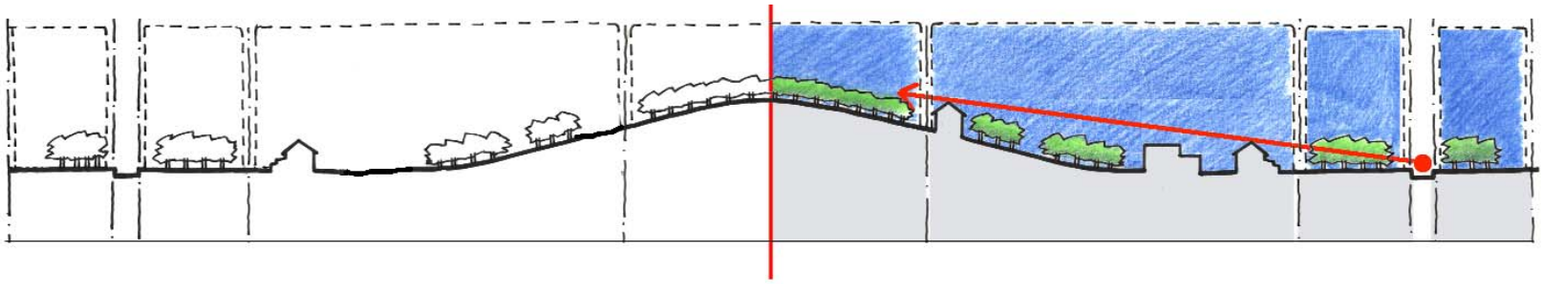
Principle 10:Protect and manage areas adjacent to roadways and other public areas.

Existing Development ***Proposed Development***

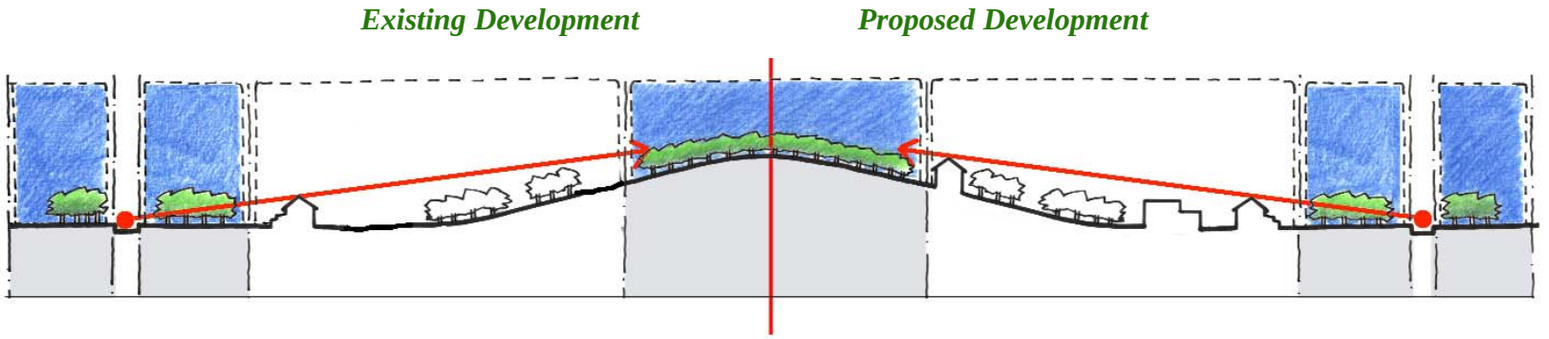


Section 1 of Existing Development (in color)
Vernacular existing development with tree planting along road and no development on hilltop (drumlin).

Existing Development ***Proposed Development***

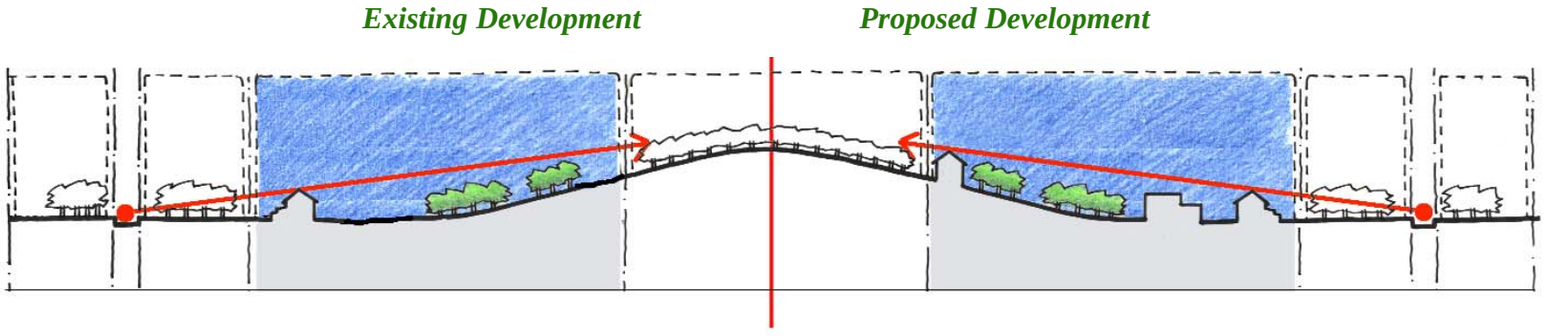


Section 1 of Proposed Development (in color)
Future development increases intensity of use while protecting view from road of adjacent forest and hilltop(drumlin).



Section 2 of Areas of High Visibility (in color)

Although in private ownership, care needs to be exhibited in how the land is developed to maintain and protect the existing semi-rural town character.



Section 2 of Areas Most Appropriate for Development (in color)

5.0 Consultant Profiles

***Randall Arendt** is a land-use planner, site designer, author, lecturer, and an advocate of "conservation planning". He received his B.A. degree from Wesleyan University (magna cum laude and Phi Beta Kappa) and his M.Phil. degree in Urban Design and Regional Planning from the University of Edinburgh, Scotland, where he was a St. Andrew's Scholar. He is Senior Conservation Advisor at the Natural Lands Trust in Media, Pennsylvania, and is the former Director of Planning and Research at the Center for Rural Massachusetts, University of Massachusetts at Amherst, where he also served as an Adjunct Professor in the Department of Landscape Architecture and Regional Planning. He is an elected member of the Royal Town Planning Institute in London.*

Mr. Arendt is the author of more than 20 publications. After co-authoring the award-winning Dealing with Change in the Connecticut River Valley: A Design Manual for Conservation and Development(now in its fourth printing), he produced a 450-page sequel entitled Rural by Design: Maintaining Small Town Character (published in 1994 by the Planners' Press). This title, which is currently in its second printing, is listed among 39 volumes recommended by the American Planning Association for "the essential planning library". His third major work Conservation Design for Subdivisions: A Practical Guide to Creating Open Space Networks, was published in 1996 by Island Press, which published a companion volume by Mr. Arendt in 1999, Growing Greener: Putting Conservation into Local Plans and Ordinances. Later that same year the American Planning Association published Mr. Arendt's most recent work, Crossroads, Hamlet, Village, Town: Design Characteristics of Traditional Neighborhoods, Old and New. Mr. Arendt's articles have appeared in a wide range of periodicals, including the Orion Nature Quarterly, Civil Engineering News, Habitat, Land Development, American Farmland, the Land Trust Exchange, Environment & Development, the Planning Commissioners' Journal, and the Journal of the American Planning Association.

Mr. Arendt is the country's most sought-after speaker on the topic of creative development design as a conservation tool. He has presented slide lectures in 45 states and five Canadian provinces. In recent years he has been featured as a key speaker at national conferences sponsored by the American Planning Association, the Urban land Institute, the American Farmland Trust, the American Society of Landscape Architects, the national Association of Home Builders, the Land Trust Alliance, and the US Environmental Protection Agency. His work has been featured in leading newspapers and periodicals including The New York Times, the Christian Science Monitor, the Wall Street Journal, Landscape Architect, Urban Land, the Amicus Journal, the Smithsonian, and the New Yorker.

This consultant profile has been obtained from Randall Arendt's webpage @ http://www.greenerprospects.com/

***Dr. Forman** is the Professor of Advanced Environmental Studies in Landscape Ecology at Harvard University. His primary scholarly interests are landscape and regional ecology, road ecology, land-use planning, and linking science with spatial pattern to mesh nature and people. He also studies land transformation, patch-corridor-matrix theory, and the ecology of road systems.*

At Harvard, Forman teaches graduate courses (landscape ecology, plants, topics in landscape ecology, and urban and suburban ecology) through the Graduate School of Design, and an undergraduate seminar (ecology and land-use planning) in the Environmental Science and Public Policy Program of Harvard College. These courses explore ecological principles and applications

for the understanding, conservation, design, policy and planning of land.
Professor Forman received a BS from Haverford College, Ph.D. from University of Pennsylvania, honorary AM from Harvard University, honorary Doctor of Humane Letters from Miami University, and honorary Doctor of Science from Florida International University. He taught at Rutgers University, the University of Wisconsin, and several field stations. He served as President of the Torrey Botanical Society, Vice President of the Ecological Society of America, and Vice President of the International Association for Landscape Ecology. He is a Fellow of the American Association for the Advancement of Science and of Clare Hall (University of Cambridge), and Honorary Professor in the Academia Sinica in China. He served as Fulbright Scholar in Colombia, CNRS Chercheur in France and Miegunyah Fellow in Australia. Forman was named Distinguished Landscape Ecologist (USA) in 1992. His awards include the Lindback Foundation Award for Excellence in Teaching, plus medals from Charles University (Prague) and the University of Florence (Italy).

This consultant profile has been obtained from Graduate School of Design webpage @ http://www.gsd.harvard.edu/people/faculty/forman/index.html

***Peter Miniutti** is an Associate Professor of Landscape Architecture at the University of Connecticut and a practicing landscape architect. His scholarship, to a large degree, is expressed via his creative activity of the design, planning and implementation of landscape architecture. Miniutti's work ranges from residential landscape designs with construction budgets in the hundreds of dollars to the development of natural resource management plans for entire ecological systems with cost implications in the millions. The scale and scope may vary, but his goal remains the same, to create or preserve settings for human activities, that if designed properly, engage the mind and touch the heart, while allowing the original environment, both human and non-human, to sustain..*

At the University of Connecticut, Associate Professor Miniutti teaches an array of undergraduate courses and directs the studies of graduate students.His primary goal is to expose students to the art of learning, which teaches them to be receptive to the acquisition of new skills and personal growth, which, in turn, empowers them with a meaningful and necessary "voice" within their chosen community. This is accomplished by providing a supportive environment that rewards commitment, rigorous work habits, creativity, self-exploration, and mistake making.

Peter Miniutti recieved a BS in Environmental Design from the University of Massachusetts and his MLA from Harvard University. He has won numerous design and teaching awards including the Janet E. Webel Award for Design Excellence for gradute work at Harvard University, a University of Connecticut Teaching Promise Award, and a CTASLA Honor Award for the design of the Vietnam Memorial in Winsted CT.

***Mathew Bishop** is a graduate student in the Plant Science Department at the University of Connecticut. He obtained his bachelors degree in landscape architecture from the University of Connecticut in 2001.His current graduate research focuses on the role of Geographic Information Systems in the town wide landscape planning process. Matthew is proficient in the use of current GIS software as well as various other software packages that enhance the planning process.He has received the Burr Scholarship twice for his continued scholarly achievement and was Connecticut ASLA student chapter president in 2000.*

***The Center for Survey Research & Analysis at the University of Connecticut** is a non-partisan, non-profit survey research facility dedicated to the study of public opinion. The scope of CSRA's projects ranges from national and international studies to local community-based surveys.*
The mission of CSRA is to advance the role of public opinion in both policy-making and social science scholarship. CSRA staff reacts quickly and efficiently to clients' needs while providing the highest quality data possible. The cornerstone of the research process is forming partnerships with clients to ensure that their specific needs are met.
CSRA is headquartered on the main campus of the University of Connecticut in Storrs, located in northeastern Connecticut. CSRA has a branch office in Stamford, just outside of New York City.

This consultant profile has been obtained from the Centers webpage @ http://csra.stamford.uconn.edu/research.html